



DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

**[Docket No. FWS–R6–ES–2013–0081; Docket No. FWS–R6–ES–2013–0082;
4500030113]**

RIN 1018–AY95; 1018-AZ61

**Endangered and Threatened Wildlife and Plants; Withdrawal of the Proposed
Rules to List Graham’s Beardtongue (*Penstemon grahamii*) and White River
Beardtongue (*Penstemon scariosus* var. *albifluvis*) and Designate Critical Habitat**

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rules; withdrawal.

SUMMARY: We, the U.S. Fish and Wildlife Service, withdraw the proposed rule to list Graham’s beardtongue (*Penstemon grahamii*) and White River beardtongue (*Penstemon scariosus* var. *albifluvis*) as threatened species throughout their ranges under the

Endangered Species Act of 1973, as amended. This withdrawal is based on our conclusion that the threats to the species as identified in the proposed rule no longer are as significant as we previously determined. We base this conclusion on our analysis of new information concerning current and future threats and conservation efforts. We find the best scientific and commercial data available indicate that the threats to the species and their habitats have been reduced so that the two species no longer meet the statutory definition of threatened or endangered species. Therefore, we are withdrawing both our proposed rule to list these species as threatened species and our proposed rule to designate critical habitat for these species.

DATES: The proposed rules published on August 6, 2013 (78 FR 47590 and 78 FR 47832), are withdrawn as of [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: The withdrawal of our proposed rules and supplementary documents are available on the Internet at <http://www.regulations.gov> at Docket Nos. FWS–R6–ES–2013–0081 and FWS–R6–ES–2013–0082, and at <http://www.fws.gov/mountain-prairie/species/plants/2utahbeardtongues/>. Comments and materials received, as well as supporting documentation used in the preparation of these withdrawals, are also available for public inspection, by appointment, during normal business hours at: U.S. Fish and Wildlife Service, Utah Ecological Services Field Office, 2369 West Orton Circle, Suite 50, West Valley City, Utah 84119; telephone 801–975–3330.

FOR FURTHER INFORMATION CONTACT: Larry Crist, Field Supervisor, U.S. Fish and Wildlife Service, Utah Ecological Services Field Office, 2369 West Orton

Circle, Suite 50, West Valley City, UT 84119; by telephone at 801–975–3330. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish this document. Under the Endangered Species Act (Act), if a species is determined to be an endangered or threatened species throughout all or a significant portion of its range, we are required to promptly publish a proposal in the **Federal Register** and make a determination on our proposal within 1 year. On August 6, 2013, we issued proposed rules to list Graham’s beardtongue and White River beardtongue as threatened species and to designate critical habitat because we determined there were threats from energy development, and cumulative threats from livestock grazing, invasive weeds, small population sizes, and climate change (78 FR 47590 and 78 FR 47832). However, this document withdraws our proposed rules to list the Graham’s beardtongue and White River beardtongue as threatened species under the Act and designate critical habitat for these species because we have now determined that the threats to the two species have been reduced such that listing is not warranted.

The basis for our action. Under the Act, we can determine that a species is an endangered or threatened species based on any of five factors: (A) The present or

threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence. We have determined that the threats to the two species have been reduced such that listing is not warranted. Therefore, this document withdraws our proposed rules to list the Graham's beardtongue and White River beardtongue as threatened species under the Act and designate critical habitat.

Peer review and public comment. We sought expert opinion from several appropriate and independent specialists to ensure that our proposed rules were based on scientifically sound data, assumptions, and analyses. We invited these peer reviewers to comment on our listing and critical habitat proposals. We also considered all comments and information received during the comment periods.

Background—Graham's beardtongue

Previous Federal Actions

For a detailed description of Federal actions concerning Graham's beardtongue, please refer to our January 19, 2006, proposed rule to list the species and designate critical habitat (71 FR 3158); our December 19, 2006, withdrawal of the proposed rule to list the species and designate critical habitat (71 FR 76024); and our August 6, 2013

proposed rules to list the species and designate critical habitat (78 FR 47590; 78 FR 47832). In the document we published on December 19, 2006 (71 FR 76024), we addressed public comments, analyzed available data, and withdrew the proposed listing and critical habitat rule for Graham's beardtongue that we published on January 19, 2006 (71 FR 3158), concluding that threats to Graham's beardtongue, particularly energy development, were not as significant as previously believed and were not likely to endanger the species in the foreseeable future throughout all or a significant portion of its range.

On December 16, 2008, the Center for Native Ecosystems, Southern Utah Wilderness Alliance, Utah Native Plant Society (UNPS), and Colorado Native Plant Society filed a complaint in the United States District Court for the District of Colorado challenging the withdrawal of our proposal to list Graham's beardtongue. The court ruled in favor of the plaintiffs on June 9, 2011, vacating our December 2006 withdrawal and reinstating our January 2006 proposed rule.

In 2007, the Service, Bureau of Land Management (BLM), Uintah County, Utah Department of Natural Resources (DNR) and Utah School and Institutional Trust Lands Administration (SITLA) drafted a Conservation Agreement (CA) for the conservation of Graham's beardtongue and its ecosystem. Although this agreement was not signed by all parties and only partially implemented, several of the parties contributed to the conservation of the species in the spirit of the agreement. In particular, BLM signed the agreement and fulfilled their commitments by funding surveys, monitoring for plant

demographics, funding a population viability analysis, and avoiding and minimizing impacts to the species and its habitat from surface disturbances (Service 2007, pp. 11–12). Uintah County and Utah DNR also funded surveys for the species from 2008 to 2010.

The best available information for Graham’s beardtongue has changed considerably since our January 2006 proposed rule was written and withdrawn. On August 6, 2013, we published a revised proposed listing rule (78 FR 47590) and a proposed critical habitat rule to reflect new information regarding Graham’s beardtongue (78 FR 47832). In these same rules we also proposed to list and designate critical habitat for White River beardtongue. Upon publication of our proposed rules, we opened a 60-day comment period that closed on October 7, 2013.

Following publication of our proposed rules, the same parties that drafted the 2007 CA for Graham’s beardtongue reconvened to evaluate species’ surveys and distribution information and reassess the conservation needs of both the White River and Graham’s beardtongues. Based on this evaluation, the parties completed a new conservation agreement (2014 CA, entire) that specifically addresses the threats identified in our 2013 proposed rule to list the two species (78 FR 47590, August 6, 2013). In the 2014 CA, the parties committed to conservation actions including establishing 17,957 hectares (ha) (44,373 acres (ac)) of occupied and unoccupied suitable habitat as protected conservation areas with limited surface disturbance and avoidance of plants by 91.4 m (300 ft). Additionally, the BLM agreed to avoid surface disturbances

within 91.4 m (300 ft) of Graham's and White River beardtongue plants within and outside of conservation areas on BLM land (see **Summary of Factors Affecting the Species**, Energy Exploration and Development and **Ongoing and Future Conservation Efforts**). The parties also developed conservation measures to address the cumulative impacts from livestock grazing, invasive weeds, small population sizes, and climate change by continuing species monitoring, monitoring climate, reducing impacts from grazing when and where detected, and controlling invasive weeds (see **Summary of Factors Affecting the Species**, Cumulative Effects from All Factors and **Ongoing and Future Conservation Efforts**). The 2014 CA is discussed in detail below.

On May 6, 2014 (79 FR 25806), we announced the reopening of the public comment period on our August 6, 2013, proposed listing and proposed designation of critical habitat rules. At that time we also announced the availability of a draft economic analysis (DEA), a draft environmental assessment (EA), the draft 2014 CA, and an amended required determinations section of the proposal (78 FR 47590). We also announced the availability of 2013 survey results for the plants and our intent to hold a public information meeting and public hearing on May 28, 2014, in Vernal, Utah (79 FR 25806).

Species Information

Taxonomy and Species Description

Graham's beardtongue was described as a species in 1937 as an herbaceous perennial plant in the plantain family (Plantaginaceae). For most of the year when the plant is dormant, it exists as a small, unremarkable basal rosette of leaves. During flowering, the plant becomes a "gorgeous, large-flowered penstemon" (Welsh *et al.* 2003, p. 625). Similar to other species in the beardtongue (*Penstemon*) genus, Graham's beardtongue has a strongly bilabiate (two-lipped) flower with a prominent infertile staminode (sterile male flower part)—the "beardtongue" that typifies the genus. The combination of its large, vivid pink flower and densely bearded staminode with short, stiff, golden-orange hairs makes Graham's beardtongue quite distinctive. Each year an individual plant can produce one to a few flowering stems that can grow up to 18 centimeters (cm) (7.0 inches (in)) tall (with some exceptions), with 1 to 20 or more flowers on each flowering stem.

Distribution and Trends

When we published the proposed listing rule in 2006, there were 109 plant records, or "points," across Graham's beardtongue's known range, and the total species' population size was estimated at 6,200 individuals. Point data represent a physical location where one or more plants were observed on the ground. Point data are usually collected by GPS and stored as a "record" in a geographic information system database.

Since 2006, BLM, Uintah County, the Utah and Colorado Natural Heritage Programs and several private parties have completed many surveys for this species. The

range of Graham's beardtongue is essentially the same as it was in 2006: a horseshoe-shaped band about 129 kilometers (80 miles) long and 9.6 km (6 mi) wide extending from the extreme southeastern edge of Duchesne County in Utah to the northwestern edge of Rio Blanco County in Colorado (Figure 1). However, over the last 7 years we have identified larger numbers of plants and a greater distribution of the species across its range. We now know of 5,076 points representing 40,333 plants—over six times the number of plants known at the time of our 2006 proposed rule and 8,631 more plants than known at the time of our 2013 proposed rule (BLM 2013d, UNHP 2013b, CNHP 2014). Although the overall number of known plants has increased with additional surveys, this does not mean the total population is increasing. Rather, many parties have surveyed a greater area and now have a more complete picture of how many total Graham's beardtongue individuals exist. We assume that the current known range of this species has not changed substantially from what it was historically, because even though we have found more plants, the boundaries of the known range of the species have not changed.

We mapped all plant points, including those from new 2013 survey data, and grouped them into populations (Figure 1). First, we followed standardized methods used by the national network of Natural Heritage Programs to identify the species' element occurrences (EO). EOs are plant points that are grouped together based on geographic proximity (NatureServe 2004, p. 6). Natural Heritage Program criteria (NatureServe 2004, p. 6) classify points into discrete EOs if they are within 2 km (1.2 mi) of each other and separated by suitable habitat. We did not always have specific habitat suitability information and in these cases relied on the 2 km (1.2 mi) distance as our primary

classification factor. Next, we included updated survey information collected from 2006 to the present and determined the number of distinct EOs. At the time of our 2013 proposed rule, we had documented 24 EOs: 20 in Utah and 4 in Colorado. An additional 8,631 plants found in the 2013 field season were added to our EO mapping in 2014, which added five new populations and merged several other populations together, resulting in no change to the total number of populations (Figure 1). For the purpose of this document, we consider EOs to be synonymous with populations and hereafter will use the term “populations” when describing the distribution of the species.

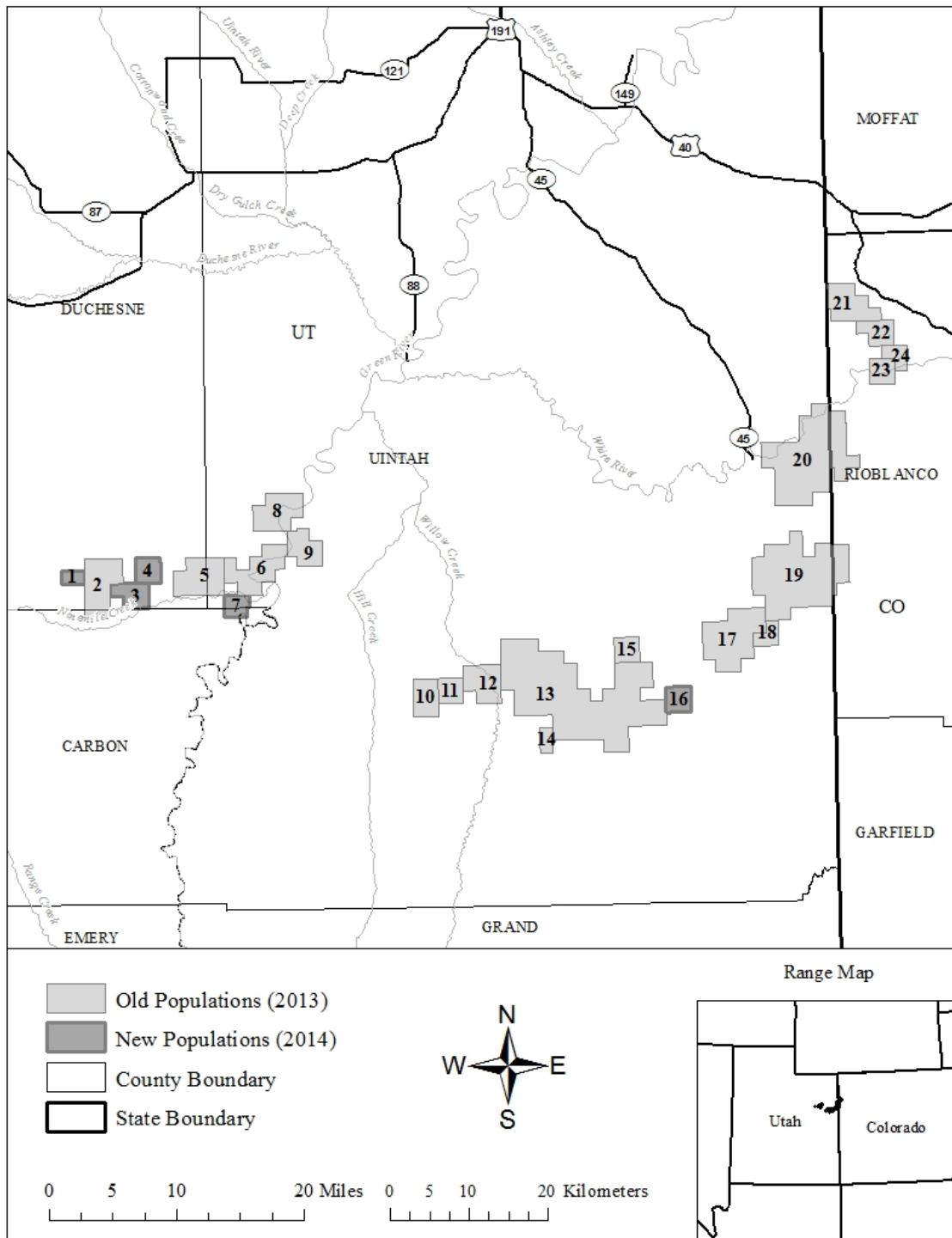


Figure 1. Graham's beardtongue's range.

Our understanding of the distribution of plants among populations has changed slightly since our 2013 proposed rule, reflecting the additional plants found during the 2013 surveys. We now estimate that one population (referred to as population 20) comprises about 18.3 percent of the species' total population, compared to our estimate of 23 percent in 2012. Population 19 contains the most plants with 27.8 percent of the entire population. Populations 19, 17, 13 and 20 combined comprise 91 percent of the known number of plants. In 2006 and 2013, we noted that population 20 was an important connectivity link between the Utah and Colorado populations of this species, and we still consider this to be true, especially given the large number of plants found in this population.

Approximately 52 percent of the total known population of Graham's beardtongue occurs on BLM-managed lands, with the remainder on non-Federal lands with State and private ownership (Table 1). A land exchange between the BLM and the State of Utah planned for 2014 will decrease the number of known plants on Federal lands and increase the plants on State lands by 2.2 percent (see Inadequacy of Existing Regulatory Mechanisms, below).

Table 1. Number of individuals of Graham's beardtongue by landowner. (* Data as presented in the 2013 proposed rule includes surveys through 2012; ** Data as presented in this 2014 withdrawal includes surveys through 2013.)

	Number of individuals (2013 proposed rule)*	Percent of total (2013 proposed rule)*	Number of individuals (2014)**	Percent of total (2014)**
Federal	18,678	59	19,986	49.6
Private	8,137	26	8,525	21.1
State	4,887	15	11,822	29.3
Tribal	0	0	0	0
Total	31,702	100	40,333	100

Population monitoring for Graham's beardtongue has been restricted to a handful of sites, thus limiting our knowledge of the population trend throughout its range. Our long-term monitoring information comes from two Graham's beardtongue sites in Utah within population 13 (see Figure 1) from 2004 to 2012, two additional sites within population 13 from 2010 to 2012, and one site in Colorado. The population 13 sites were stable and perhaps slowly increasing with a stochastic population growth rate just above one (McCaffery 2013a, p. 15). Recruitment and flowering for these Utah sites was low and sporadic, indicating that conditions were not always suitable for flowering to occur (McCaffery 2013a, p. 9). Although these two sites were stable, we do not know if this represents the trend of every population of the species across its range. The Colorado monitoring site showed that plant density remained similar between the 1986 to 1990 monitoring effort, and a renewed monitoring effort in 2005. In addition, the number of plants increased between 2009 to 2011 (BLM 2011, p. 6-7) but was lower in both years than the number counted in 2005. Small population sizes and low recruitment make this species more vulnerable to

stochastic events, and without concerted conservation efforts, changes in stressors or habitat conditions may negatively impact the long-term growth of these sites (McCaffery 2013a, p. 19).

No link was found between reproduction and precipitation on a regional level, but it is likely that we do not completely understand the environmental factors affecting reproduction and survival (McCaffery 2013a, p. 16). A combination of several factors could be affecting population dynamics of Graham's beardtongue. For example, herbivory and climate could interact to influence reproduction. Plants at the Blue Knoll study site were negatively impacted by herbivory from tiger moth caterpillars (possibly *Arctia caja utahensis*) (see Grazing, below), but a cool, wet spring in 2011 may have reduced herbivory on reproductive plants (Dodge and Yates 2011, pp. 7–8). Further studies are necessary to determine if herbivory or other factors are driving population dynamics of this species.

Habitat

Graham's beardtongue is an endemic plant found mostly in exposed oil shale strata of the Parachute Creek Member and other unclassified members of the Green River geologic formation including the Douglas Creek Member. Most populations are associated with the surface exposure of the petroleum-bearing oil shale Mahogany ledge (Shultz and Mutz 1979, p. 40; Neese and Smith 1982, p. 64). Soils at these sites are shallow with virtually no soil horizon development, and the surface is usually covered

with broken shale chips or light clay derived from the thinly bedded shale. Based on data up to 2012, about a third of all known point locations of plants in our files grow on slopes that are 10 degrees or less, with an average slope across all known points of 17.6 degrees (Service 2013, p. 2). The species occurs at an average elevation of 1,870 meters (m) (6,134 feet (ft)), with a range in elevation from 1,426 to 2,128 m (4,677 to 6,982 ft) (Service 2013, p. 4). Individuals of Graham's beardtongue usually grow on southwest-facing exposures (Service 2013, p. 1).

Graham's beardtongue is associated with a suite of species similarly adapted to xeric (very dry) growing conditions on highly basic calcareous shale soils, including saline wildrye (*Leymus salinus*), mountain thistle (*Cirsium eatonii* var. *eriocephalum*), spiny greasewood (*Glossopetalon spinescens* var. *meionandra*), Utah juniper (*Juniperus osteosperma*), two-needle piñon (*Pinus edulis*), and shadscale saltbush (*Atriplex confertifolia*) (UNHP 2013a, entire). Graham's beardtongue co-occurs with eight other rare species that are similarly endemic and restricted to the Green River Formation, including White River beardtongue. Other beardtongue species growing in the vicinity of Graham's beardtongue include thicket beardtongue (*Penstemon pachyphyllus*) and Fremont's beardtongue (*Penstemon fremontii*) (Fitts and Fitts 2008, pp. 13–28; Fitts and Fitts 2009, pp. 11–26; Fitts 2010, pp. 15–21; Fitts 2014, entire.), and these are likely important for supporting pollinators.

At higher elevations, Graham's beardtongue is found within sparse pinon-juniper woodland plant communities and on canyon rims. At lower elevations Graham's

beardtongue is associated with a sparse desert shrubland dominated by shadscale saltbush.

Biology

Graham's beardtongue individuals live at least 10 years and likely longer; however, we do not know the plant's average life span (Service 2012a, p. 2). Graham's beardtongue is not as genetically diverse as other common, widespread beardtongues from the same region (Arft 2002, p. 5). However, populations 1 through 9 (see Figure 1) have minor morphological differences from the rest of the Graham's beardtongue populations (Shultz and Mutz 1979, p. 41) and may, due to geographic isolation, be genetically divergent from the remainder of the species' population, although this hypothesis has never been tested.

Graham's beardtongue usually flowers for a short period of time in late April through late June. Pollinators and flower visitors of Graham's beardtongue include the bees *Anthophora lesquerellae*, *Osmia sanrafaelae*, *Osmia rawlinsi*, the sweat bees *Lasioglossum sisymbrii* and *Dialictus* sp., and the masarid wasp *Pseudomasaris vespoides*, which is thought to be the primary pollinator for Graham's beardtongue (Lewinsohn and Tepedino 2007, p. 245; Dodge and Yates 2008, p. 30). At least one large pollinator, Hunt's bumblebee (*Bombus huntii*), is known to visit Graham's beardtongue (71 FR 3158, January 19, 2006), which is not unexpected due to the relatively large size of Graham's beardtongue's flowers compared to other beardtongues.

Graham's beardtongue has a mixed mating system, meaning individuals of this species can self-fertilize, but they produce more seed when they are cross-pollinated (Dodge and Yates 2009, p. 18). Thus, pollinators are important for maximum seed and fruit production. Based on the size of the largest Graham's beardtongue pollinators (i.e., Hunt's bumblebee), we expect pollinators are capable of travelling and transporting pollen for distances of at least 700 m (2,297 ft) (Service 2012b, pp. 8, 12). Therefore, maintaining sufficiently large numbers of reproducing plants with sufficient connectivity across the species' population distribution ensures cross-pollination, preserves genetic diversity, and prevents inbreeding depression (Dodge and Yates 2009, p. 18). Pollinators need a diversity of native plants for foraging, nesting, and egg-laying sites, and undisturbed places for overwintering (Shepherd *et al.* 2003, pp. 49–50). Thus, it is important to protect vegetation diversity within and around Graham's beardtongue populations to maintain a diversity of pollinators.

Background—White River beardtongue

Previous Federal Actions

On November 28, 1983, White River beardtongue was designated as a category 1 candidate under the Endangered Species Act of 1973, as amended (Act) (48 FR 53640). Category 1 candidate species were defined as “those species for which the Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of

a proposed rule to list but issuance of the proposed rule is precluded” (61 FR 7597, February 28, 1996). In the February 1996 candidate notice of review (CNOR) (61 FR 7596), we abandoned the use of numerical category designations and changed the status of White River beardtongue to a candidate under the current definition. We maintained White River beardtongue as a candidate species in subsequent updated CNORs up through the publication of the 2013 proposed rule to list the species.

On September 9, 2011, we reached an agreement with plaintiffs in Endangered Species Act Section 4 Deadline Litig., Misc. Action No. 10-377 (EGS), MDL Docket No. 2165 (D. DC)) to systematically review and address the needs of all species listed in our 2010 CNOR, which included White River beardtongue. On August 6, 2013, we published a proposed rule to list Graham’s and White River beardtongues and a proposed rule to designate critical habitat for both species (78 FR 47590; 78 FR 47832). As explained above in **Background—Graham’s beardtongue**, *Previous Federal Actions*, a new conservation agreement was completed (2014 CA, entire) to specifically address the threats identified in our 2013 proposed rule. This conservation agreement along with the economic analysis of our 2013 proposed critical habitat designation and other supporting documents were made available for public review and comment as described above in **Background—Graham’s beardtongue**, *Previous Federal Actions*.

Species Information

Taxonomy and Species Description

White River beardtongue is in the plantain family (Plantaginaceae). It is an herbaceous, shrubby plant with showy lavender flowers. It grows up to 50 cm (20 in) tall, with multiple clusters of upright stems. It has long, narrow, green leaves. Like other members of the beardtongue genus, including Graham's beardtongue, White River beardtongue has a strongly bilabiate (two-lipped) flower with a prominent infertile staminode (sterile male flower part), or "beardtongue." Blooming occurs from May into early June, with seeds produced by late June (Lewinsohn 2005, p. 9).

White River beardtongue was first described as a new species, *Penstemon albifluvis*, in 1982 (England 1982, entire). In 1984, the taxon was described as variety *P. scariosus* var. *albifluvis* (Cronquist *et al.* 1984, p. 442). *P. s.* var. *albifluvis* has a shorter corolla and shorter anther hairs than typical *P. scariosus*. White River beardtongue is also unique from *P. scariosus* because it is endemic to low-elevation oil shale barrens near the White River along the Utah–Colorado border (see Habitat below for more information), while typical *P. scariosus* habitat occurs at higher elevations on the West Tavaputs and Wasatch Plateaus of central Utah (Cronquist *et al.* 1984, p. 442).

Distribution and Trends

The historical range of White River beardtongue has likely not changed since the species was first described in 1982 (England 1982, pp. 367–368). White River beardtongue was first discovered along the north bank of the White River 1 mile

upstream from the Ignacio Bridge (England 1982, p. 367). The historical range was described as occurring from east central Uintah County, Utah, to Rio Blanco County, Colorado (England 1982, p. 367).

White River beardtongue's current range extends from Raven Ridge west of Rangely in Rio Blanco County, Colorado, to the vicinity of Willow Creek in Uintah County, Utah. The bulk of the species' range occurs between Raven Ridge and

Evacuation Creek in eastern Utah, a distance of about 30 km (20 mi) (

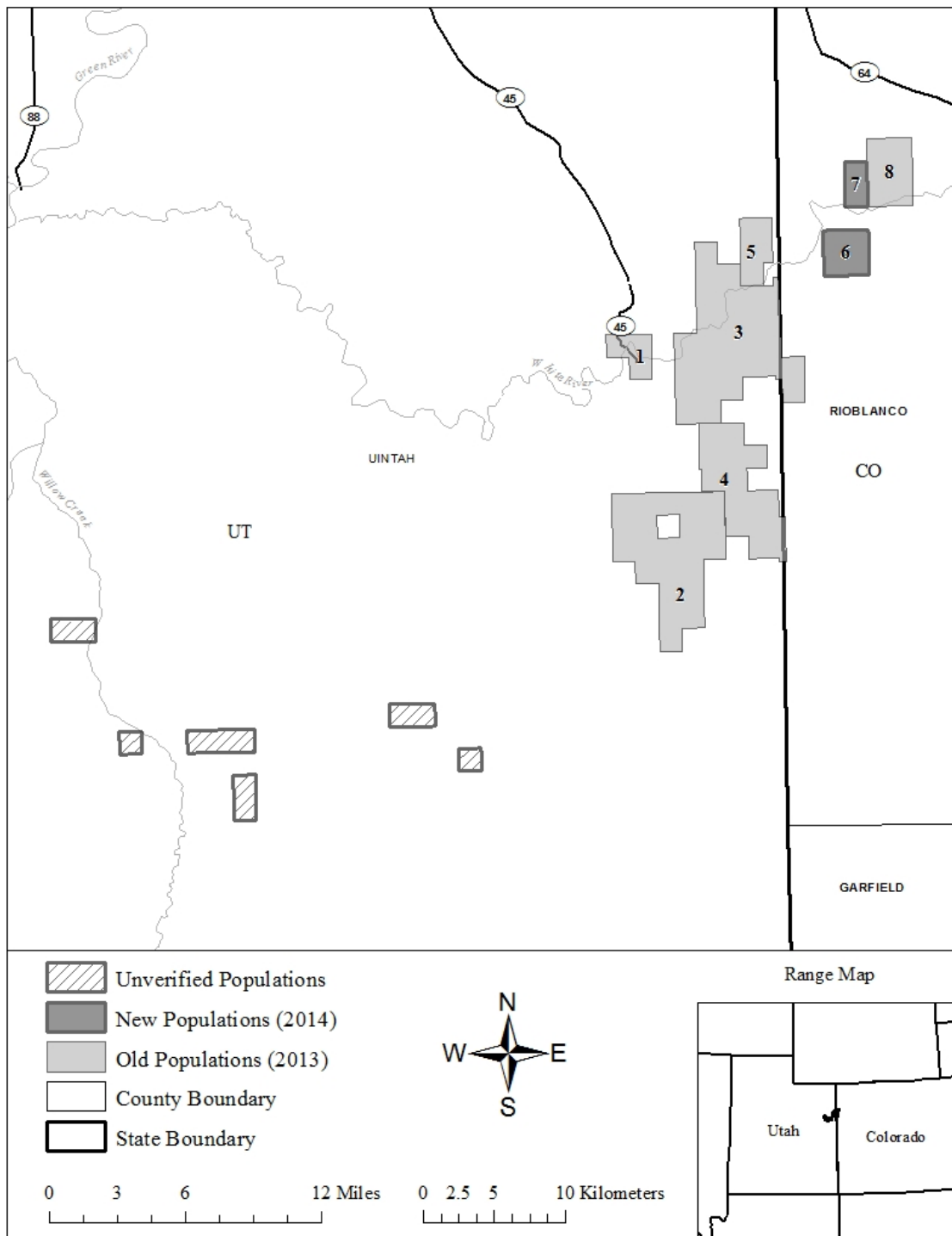


Figure 2) (CNHP 2012, entire; UNHP 2012, entire). Herbarium collections from 1977 to 1998 indicate that the species' range might extend further west to

Willow Creek, Buck Canyon, and Kings Well Road (UNHP 2012, entire). However, we have not revisited the herbarium collection locations to confirm the species' presence—it is possible that the herbarium collections represent individuals of the closely related and nearly indistinguishable Garrett's beardtongue (*Penstemon scariosus* var. *garrettii*). Therefore, we consider these to be unverified locations and excluded these records from further analysis (Figure 2).

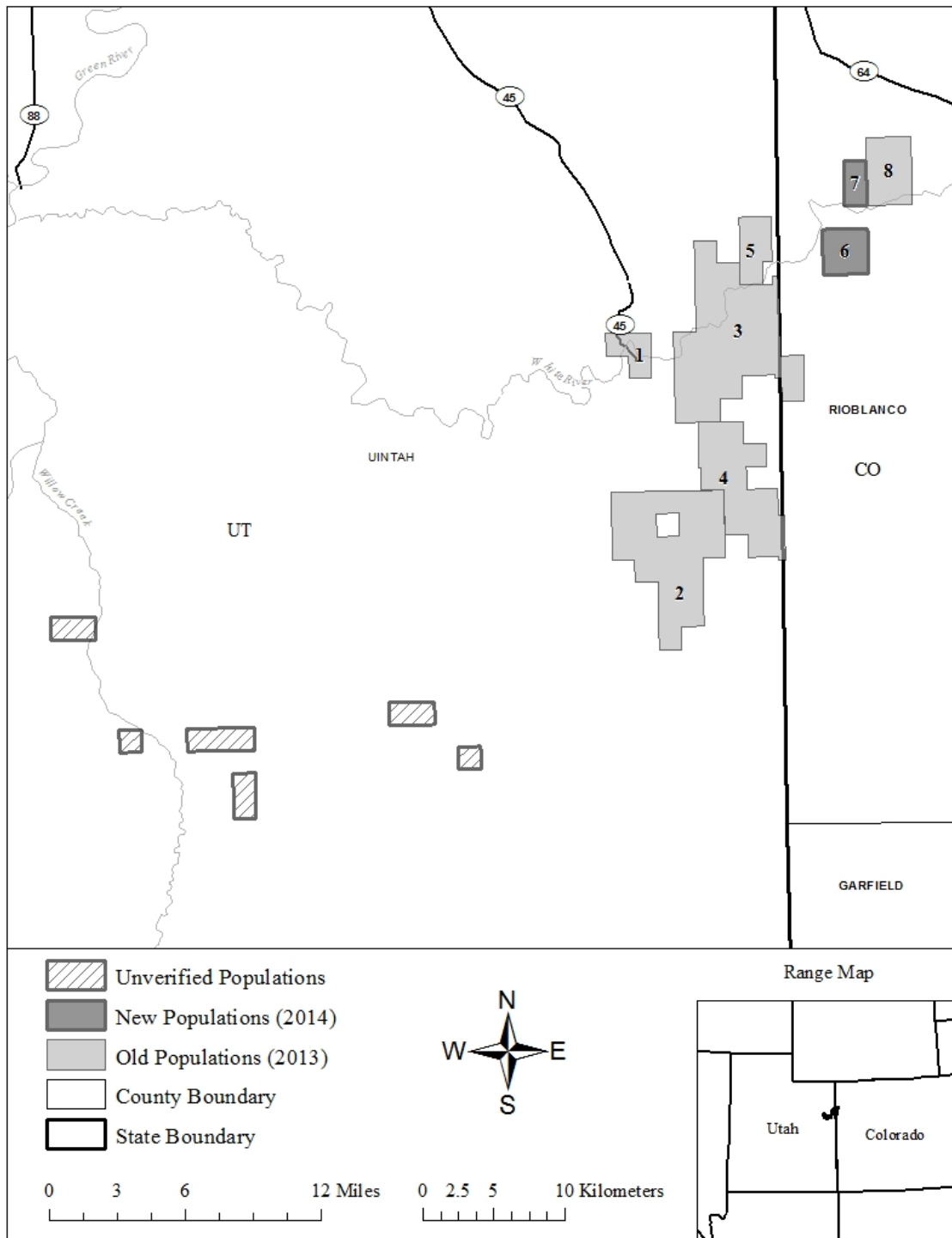


Figure 2. White River beardtongue's range.

We do not have complete surveys for White River beardtongue and thus do not know the total population size for this species. Our best population estimate is 12,215 individuals (including 792 new plants that were found during surveys in 2013) (Service 2014b).

In our 2013 proposed rule, we delineated seven populations in the main portion of White River beardtongue's range using data collected through 2012. Based on new 2013 survey information, we have now reanalyzed the data using the methodology explained above under **Graham's beardtongue**—Species Information. We now know of 8 populations; 5 populations in Utah and 3 populations in Colorado (Figure 2). Approximately 61 percent of the known population of White River beardtongue occurs on BLM land, with the remainder occurring on State and private lands (Table 2).

Table 2. Number of known individuals of White River beardtongue by landowner. (* Data as presented in the 2013 proposed rule includes surveys through 2012; ** Data as presented in this 2014 final rule includes surveys through 2013.)

	Number of individuals (2013 proposed rule)*	Percent of total in (2013 proposed rule)*	Number of individuals (2014)**	Percent of total in (2014)**
Federal	7,054	62	7,481	61.2
Private	3,093	27	3,458	28.3
State	1,276	11	1,276	10.5
Tribal	0	0	0	0
Total	11,423	100	12,215	100

All of our long-term monitoring information for the species comes from two sites that were monitored from 2004 to 2012 (populations 1 and 6, see Figure 2), and one site that was monitored from 2010 to 2012 (population 3, see Figure 2). At one site, plants declined over this time and the other two sites increased slightly (McCaffery 2013a, p. 8). Although two of three sites were found to be stable, we do not know if this finding represents the trend for all populations of the species across its range, but it represents the best available information on population trends for the species.

White River beardtongue flowers each year regardless of new seedling recruitment, in contrast to Graham's beardtongue (McCaffery 2013a, p. 9). Like Graham's beardtongue, White River beardtongue is vulnerable to stochastic events as well as increases in stressors or declining habitat conditions (McCaffery 2013a, p. 19). Also like Graham's beardtongue, no link was found between reproduction and precipitation on a regional level (McCaffery 2013a, p. 16), but this issue should be studied on a more local scale. In 2009, a significant recruitment event occurred in two of the study populations (Dodge and Yates 2010, pp. 11–12). Many of these seedlings died between 2009 and 2010, but the net result was an increase in population size by the end of the study (Dodge and Yates 2011, pp. 6, 10). Continued monitoring is necessary to determine the frequency of recruitment and how this influences the long-term population trends of this species. In addition, like Graham's beardtongue, we need further studies to determine what factors are driving population dynamics of White River beardtongue.

Habitat

White River beardtongue is restricted to calcareous (containing calcium carbonate) soils derived from oil shale barrens of the Green River Formation in the Uinta Basin of northeastern Utah and adjacent Colorado. The species overlaps with Graham's beardtongue at sites in the eastern portion of Graham's beardtongue's range.

White River beardtongue is associated with the Mahogany ledge and Parachute Creek formation. The habitat of White River beardtongue is a series of knolls and slopes of raw oil shale derived from the Green River geologic formation (Franklin 1995, p. 5). These soils are often white or infrequently red, fine-textured, shallow, and usually mixed with fragmented shale. These very dry substrates occur in lower elevations of the Uinta Basin, between 1,500 and 2,040 m (5,000 and 6,700 ft), and the species occurs at an average elevation of 1,847 m (6,060 ft). About one-fifth of all known point locations of White River beardtongue are on slopes of 10 degrees or less, with an average slope for all known points of 19.2 degrees (Service 2013, pp. 3–4). White River beardtongue individuals usually grow on southwest-facing exposures (Service 2013, p. 1).

Species growing with White River beardtongue include saline wildrye, mountain thistle, spiny greasewood, Utah juniper, two-needle piñon, and shadscale saltbush (UNHP 2013, entire), and many oil shale endemic plant species (Neese and Smith 1982, p. 58; Goodrich and Neese 1986, p. 283). Other beardtongue species growing in the vicinity of White River beardtongue include thistleleaf beardtongue and Fremont's beardtongue (Fitts

and Fitts 2008, pp. 13–28; Fitts and Fitts 2009, pp. 11–26; Fitts 2010, pp. 15–21; Fitts 2014, pers.comm.) and these are likely important for supporting pollinators.

Biology

White River beardtongue is long-lived due to the presence of a substantial and multi-branched woody stem (Lewinsohn 2005, p. 3), and individual plants can live for 30 years (Service 2012c, p. 3). Most plants begin to flower when the woody stem reaches 3 to 4 cm (1 to 1.5 in.) in height (Lewinsohn and Tepedino 2005, p. 4), usually in May and June.

The species is pollinated by a wasp, *Pseudomasaris vespoides*, and several native, solitary bee species in the genera *Osmia*, *Ceratina*, *Anthophora*, *Lasioglossum*, *Dialictus*, and *Halictus* (Sibul and Yates 2006, p. 14; Lewinsohn and Tepedino 2007, p. 235).

These pollinators are medium in size compared to the larger pollinators generally associated with Graham's beardtongue (see **Background—Graham's beardtongue**, Biology, above). White River beardtongue has a mixed mating system, meaning it can self-fertilize but produces more seed when it is cross-pollinated (Lewinsohn and Tepedino 2007, p. 234). Thus, pollinators are important for maximum seed and fruit production.

Based on their medium size, the pollinators of White River beardtongue are capable of travelling and moving pollen across at least 500-m (1,640-ft) distances

(Service 2012b, pp. 8, 13). Although White River beardtongue has low flower visitation rates by pollinators, there is no evidence that pollinators are limiting for this species (Lewinsohn and Tepedino 2007, p. 235). It is important to maintain the diversity of pollinators by maintaining vegetation diversity for White River beardtongue because it stabilizes the effects of fluctuations in pollinator populations (Lewinsohn and Tepedino 2007, p. 236).

We have very little information regarding the genetic diversity of White River beardtongue. This species, like Graham's beardtongue, is likely not as genetically diverse as other common, sympatric beardtongues (Arft 2002, p. 5).

Summary of Comments and Recommendations

In the proposed rules published on August 6, 2013 (78 FR 47590), we requested that all interested parties submit written comments on the proposals by October 7, 2013. We also contacted appropriate Federal and State agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposals. Newspaper notices inviting general public comment and announcing our informational meeting and public hearing were published in the Salt Lake Tribune, Deseret News, and Uintah Basin Standard. We received requests for a public hearing, which was held in Vernal, Utah, on May 28, 2014. We reopened the comment period on May 6, 2014, for 60 days (79 FR 25806), to accept comments on the proposed rules and several related documents (see **Previous Federal Actions**).

During the 2 comment periods for the proposed rules, we received 4,889 comment letters supporting or opposing the proposed listing of Graham's and White river beardtongues with designated critical habitat. During the May 28, 2014, public hearing, one organization commented on the proposed rules. All substantive information provided during the comment periods is either incorporated directly into this document or addressed below.

In accordance with our peer review policy published on July 1, 1994 (59 FR 34270), we solicited expert opinion from seven appropriate and independent specialists with scientific expertise that included familiarity with Graham's and White River beardtongues and their habitat, biological needs, and threats. We received responses from four of the peer reviewers. We reviewed all comments received from the peer reviewers for substantive issues and new information regarding the listing of Graham's and White River beardtongues. One peer reviewer said that our description and analysis of the biology, habitat, geology, soils, plant community associates, climatic conditions, population trends, and historic and current distribution of the species are accurate. Two peer reviewers found that the proposed rule provided an accurate and adequate review and analysis of the factors affecting the species. Two peer reviewers also stated that we reached logical conclusions and included pertinent literature. Other peer reviewer comments are addressed in the following summary and incorporated into this withdrawal document as appropriate.

We also received and considered many comments relating to critical habitat and the associated environmental assessment and economic analysis of critical habitat, but responses to these comments are not included here because we are withdrawing the proposed listing and critical habitat rules for the Graham's beardtongue and White River beardtongue. Where comments on our proposed critical habitat are also relevant to the species' biology or distribution, or relevant to our withdrawal decision, we have addressed these issues in this document as appropriate.

Peer Review Comments

Comment (1): One peer reviewer urged us to protect Graham's and White River beardtongues by designating an Area of Critical Environmental Concern (ACEC).

Our Response: An Area of Critical Environmental Concern may only be designated by the BLM. An ACEC that overlaps a portion of Graham's and White River beardtongues has been designated in Colorado by the BLM. No ACEC was designated by BLM in Utah.

Comment (2): Several peer reviewers provided corrections, clarifications, or suggested additions to the biological background information for Graham's beardtongue. One peer reviewer clarified that a cool, wet spring may have reduced herbivory on Graham's beardtongue, but effects on reproduction are not definitive. One peer reviewer pointed out that the flowering period is late April to late June with seeds ripening

between mid-June and mid-August. One peer reviewer suggested that we add that, “maintaining both a sufficient number of reproducing plants per population, a sufficient number of those populations and connectivity between those populations is needed to ensure cross-pollination and genetic diversity of the species.” Two peer reviewers suggested that we change our description of the average lifespan of the species—the average lifespan is unknown, but plants have been documented surviving for at least 10 years in monitoring plots over a 10-year period.

Our Response: We included this information under **Background—Graham’s beardtongue, Species Information.**

Comment (3): One peer reviewer stated that sheep grazing can have significant impacts to Graham’s beardtongue. Sheep were observed browsing all inflorescences of Graham’s beardtongue from one monitoring plot eliminating all reproduction at the site for the year.

Our Response: We included this observation under **Summary of Factors Affecting the Species, Grazing and Trampling.** In our proposal and this document we acknowledge that herbivory and trampling can be severe at some locations, but despite such intense impacts from sheep, this monitoring site still had a stochastic population growth rate slightly above one (MacCaffrey 2013a, p. 15); therefore, we do not consider grazing to be a threat to the species.

Comment (4): One peer reviewer provided updated information about the results of transplantation of Graham's beardtongue in 2012. None of the plants survived transplantation.

Our Response: We included this additional information under **Summary of Factors Affecting the Species**, Road Maintenance and Construction.

Comment (5): One peer reviewer asked us to update our citation of Dodge 2013 to Reisor 2013, because the author's name has changed.

Our Response: We did not cite this document correctly in the 2013 proposal, so we have updated this citation.

Comment (6): One peer reviewer found that our description of the slopes where the species are found was accurate but may represent a survey bias because some slopes are too steep to safely survey, so the proportion of plants on steeper slopes may be higher than we represent.

Our Response: We agree with the comment, but our analysis of the relationship between slopes and species' presence is based on best available information, which shows that the average slope where the species occurs is 17.6 degrees. Since there are little data showing that the species occurs on steeper slopes, we used the best information available.

Comment (7): One peer reviewer questioned the importance of “cushion-like” herbs we described in our proposed critical habitat rule (78 FR 47832) to the natural community where Graham’s and White River beardtongue grows and wondered what other cushion-like plants besides *Arenaria hookeri* occur in the same natural community.

Our Response: Cushion-like plants in Graham’s beardtongue habitat include *Chamaechaenactis scaposa* (fullstem), *Parthenium ligulatum* (Colorado feverfew), *Townsendia mensana* (table townsend daisy), the *Hymenoxys* species (rubberweeds) and some of the *Cryptantha* species (Cryptantha) (Neese and Smith 1982).

Comment (8): One peer reviewer said that Graham’s beardtongue overlaps the Douglas Creek and Parachute Creek members of the Green River Formation but agreed that the description of the soils and geology of White River beardtongue in our proposed rule to designate critical habitat (78 FR 47832) was accurate.

Our Response: We found that 2,654 Graham’s beardtongue plants overlap with the Douglas Creek member of the Green River formation, which represents a small percentage of the total population. We have updated the **Background—Graham’s beardtongue**, *Species Information*, Habitat section to reflect this overlap.

Comment (9): One peer reviewer noted that photographs show Graham's beardtongue growing on open slopes, canyon rims, and occasionally in pinon-juniper openings.

Our Response: We include these habitat types in this document (see **Background—Graham's beardtongue**, *Species Information*, Habitat).

Comment (10): One peer reviewer noted the importance of pollinators. They cited an example of a plant species that lost its pollinator and stopped producing seed.

Our Response: We agree with the importance of pollinators and retain this discussion in our withdrawal.

Comment (11): One peer reviewer found that our description of the importance of intact soils to Graham's and White River beardtongues is correct although he described finding Graham's and White River beardtongues in disturbed soils adjacent to a pipeline and road.

Our Response: We are aware of isolated instances where the species may persist adjacent to soil disturbance. However, these locations do not provide the full complement of associated plants or pollinator species and thus would not provide suitable habitat for the species' long-term viability.

Comment (12): One commenter provided information that thicket beardtongue and Fremont's beardtongue occur in the vicinity of Graham's and White River beardtongue and might be important for supporting pollinators.

Our Response: We agree with the comment and included this information in our description of the habitat (see **Background—Graham's beardtongue and White River beardtongue**, *Species Information*, Habitat).

Comment (13): One peer reviewer asked us to add the citation of Dodge and Yates 2009 to support our discussion that the highest number of fruits is produced when flowers are cross-pollinated.

Our Response: We reviewed the Dodge and Yates 2009 paper and have included the citation under **Summary of Factors Affecting the Species**, Road Construction and Maintenance and Small Population Size.

Comment (14): One peer reviewer informed us that additional occurrences of Graham's beardtongue were found in 2013.

Our Response: We have incorporated the additional data from the 2013 survey season into our analysis.

Comment (15): One peer reviewer suggested that we review herbarium specimens to verify the range of White River beardtongue.

Our Response: The peer reviewer did not provide any additional information or documentation that verifies the correct identification of herbarium specimens or the accuracy of locations where the herbarium specimens were found. Until both of these are verified by a qualified botanist, we will continue to consider these herbarium specimens as unverified. We identified the range of White River beardtongue by using the best available information, which consists of locations that were verified both to the correct subspecies and location. This documented information came from many sources including the UNHP (2012 and 2013b), CNHP (2014), BLM (2013b) and private parties (see **Background—White River Beardtongue**, *Species Information*, Distribution and Trends). We will consider additional information as it becomes available.

Comment (16): One peer reviewer stated that he has observed deer grazing on Graham's beardtongue.

Our Response: Deer are listed as one of the grazers of Graham's beardtongue under **Summary of Factors Affecting the Species**, Grazing and Trampling. However, we do not have information suggesting that deer herbivory is a threat to the species. As discussed in the section listed above, we do not consider grazing by deer a threat to the species because demographic data show the monitoring sites for Graham's beardtongue are stable despite the current level of observed herbivory (MacCaffrey 2013a, p. 15).

Comment (17): While building a species' distribution model for Graham's beardtongue, one peer reviewer found that late-season moisture was important in determining the distribution of the species.

Our Response: We requested more information on this topic, but the peer reviewer did not provide data that supports this assumption, and we do not have additional information. We do not fully understand the relationship between the precipitation regime and the response of Graham's beardtongue. We welcome any further information on this relationship.

Comment (18): One peer reviewer noted that surveys for the Graham's and White River beardtongues were also conducted by the Utah Natural Heritage Program and funded by the Utah Endangered Species Mitigation Fund and Uintah County.

Our Response: We recognize and are appreciative of the contributions to surveying for both beardtongue species by the State of Utah and Uintah County. We explain the role of the State and County under **Background—Graham's beardtongue, Previous Federal Action**. These surveys have contributed to our improved understanding of the distribution of both species.

Comment (19): One peer reviewer believed that our plant data were inadequate to determine population abundances and trends because we analyzed the population data as

a whole instead of analyzing the data separately for each individual population. Further, the peer reviewer stated that metapopulation dynamics are important for understanding population trends and that we should evaluate these relationships.

Our Response: This document discusses the available monitoring information, our assumptions, and the lack of abundance data (see **Background—Graham’s beardtongue**, *Species Information*, Distribution and **Background—White River beardtongue**, *Species Information*, Distribution). We did not lump species data to determine trends but instead used the best available information on population trends, which comes from two sites for each species. We recognize that individual population trends for other populations may differ from the monitored populations, and to that end two new monitoring sites were added for Graham’s beardtongue in 2010, and one additional monitoring site was added in 2010 for White River beardtongue. In addition, rangewide monitoring will be initiated under the 2014 Conservation Agreement. The two sites that were monitored for 9 years show that those individual populations of Graham’s beardtongue were stable and that the two monitored populations of White River beardtongue were stable and close to stable. Further work is needed to determine if the trends at these sites are representative of the entire population.

We acknowledge that there are gaps in our understanding of the species’ abundance based on the available abundance data. We reported only known abundances in the proposed rule and in this document, and acknowledge that the actual abundance of both species may be higher.

Comment (20): One peer reviewer identified an additional population of White River beardtongue that was located in Colorado in 2013.

Our Response: We have included the additional population of White River beardtongue found in Colorado into our dataset (*see* Figure 2).

Comment (21): One peer reviewer asserted that we did not support our conclusions regarding the historical distribution and abundance of the Graham's and White River beardtongues, as grazing may have extirpated additional populations of both species. Widespread, heavy, and unregulated historical grazing may have reduced the distribution and abundance of the species. More recently, livestock grazing was reported as a threat to Graham's beardtongue by several biologists (Neese 1982; Frates 2014).

Our Response: The historical distribution and abundance of Graham's beardtongue is unknown, and the reviewer did not provide information on the potential extent of the historical range. Historical heavy grazing and trampling may have extirpated some individuals or populations of both species; however, this most likely did not reduce the range of either species because current monitored populations are still stable or close to stable despite observations of livestock grazing and trampling at monitoring sites.

Comment (22): One peer reviewer found that we did not sufficiently analyze the naturalness of the hydrologic regime as a factor affecting the species.

Our Response: We agree that the hydrologic regime may be important for these beardtongues, especially since subsurface mining may produce fissures that alter surface hydrologic regimes (Hotchkiss *et al.* 1980. p. 46). We do not have nor did the peer reviewer provide specific information on the hydrologic regime for these species. However, because both plant species occur across a wide range and in sufficient numbers, we find that the current hydrologic regime is sufficient to sustain the species for the future with the establishment of conservation areas.

Comment (23): One peer reviewer suggested that we consider livestock trampling as a significant threat because it can affect the species at multiple scales including direct impacts to the species, degradation of habitat, and even large landscape effects to the community including pollinators, soils, and hydrology.

Our Response: We do not fully understand how Graham's and White River beardtongues respond to livestock grazing pressure, including trampling. However, monitored populations that overlap active grazing allotments show a stable trend over a 9-year monitoring period. Therefore, we did not find livestock trampling to be a threat, as discussed under **Summary of Factors Affecting the Species**, Grazing and Trampling.

Comment (24): One peer reviewer found that we did not sufficiently consider small population size as a factor affecting the species, citing that small populations are more likely to go extinct than large populations, and that isolated small populations become even more vulnerable to extinction.

Our Response: Although we found that small population size contributed to other factors that were a cumulative threat to the species without protections, we no longer consider small population size a threat to the species because we have reduced threats that may isolate populations through the conservation measures in the 2014 CA. Sufficient numbers of large and small populations of both beardtongue species will be conserved to provide resiliency and redundancy to each species throughout their ranges. The 2014 CA provides for the establishment of conservation areas that protect these populations and provide connectivity. The protection of populations within conservation areas will provide for the continued persistence of both species.

Comment (25): One peer reviewer noted that during surveys in 2013 an extensive and moderately dense cover of purple mustard (*Chorisporea tenella*), an invasive weed, was found occurring with Graham's beardtongue in the Raven Ridge ACEC. This reviewer concluded that weed invasion is a threat to Graham's beardtongue.

Our Response: We have updated the **Summary of Factors Affecting the Species, Invasive Weeds** section of this document with this new information. However, we do not agree that this instance of an invasive weed invasion constitutes a threat to the species

because there are sufficient numbers of populations of Graham's beardtongue that are unaffected by invasive weeds. In addition, further evidence that purple mustard is negatively impacting the population of Graham's beardtongue would be needed for it to be considered a threat to the species.

Comment (26): One peer reviewer agreed with our conclusion that both Graham's and White River beardtongues meet the definition of a threatened species and that they should be protected under the Act.

Our Response: At the time of publication of the 2013 proposed listing rule, we concluded that threats to Graham's and White River beardtongues included negative effects from energy exploration and development and cumulative impacts from increased energy development, livestock grazing, invasive weeds, small population sizes, and climate change. These threats have since been addressed in the 2014 CA, in part by creating conservation areas that will protect the species from ground-disturbing activities.

Tribal Comments

(27) Comment: The Ute Indian Tribe (Tribe) asked us to comply with our treaty and trust responsibilities to the Tribe, the Executive Order on Government-to-Government Consultation, the Department of the Interior's Policy on Consultation with Indian Tribal Governments, and the Secretarial Order on American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Act. The Tribe stated that listing actions

will directly affect the Tribe and that proposed critical habitat borders trust lands and are within the Tribe's Uintah and Ouray Reservation. Since the Tribe is a major energy producer, they are concerned that the proposed actions will affect the economy and interests of the Tribe by significantly impacting oil and gas development on their Reservation.

Our Response: In the proposed rule, we determined that no tribal lands were known to be occupied by the beardtongues. Therefore, we did not propose to designate critical habitat for either species on tribal lands. It is possible that one or both species occurs on tribal lands in potential habitat that has not been surveyed. At the time of publication of our May 6, 2014, document reopening the comment period (79 FR 25806), we contacted the Tribal chair and Tribal attorney by phone and e-mail regarding the proposed rules and the document, and updated them on the reopening of the public comment period and the availability of the draft 2014 CA, economic analysis, and environmental assessment for review and comment. Also, at that time we offered to discuss the proposed rules with the Tribe.

State and County Comments

(28) Comment: The Utah Governor's Office, Utah Public Lands Policy Coordination Office (PLPCO), Duchesne County, Carbon County, and other commenters stated that the listing of Graham's and White River beardtongues should be withdrawn because there is no basis for concluding that either species is threatened as defined in the

Act. The State finds the proposal to list is unsupported by sufficient scientific information, data, and analysis and is based on inaccurate interpretations concerning regulatory actions such as energy development and mining proposals. Additionally, the State has expertise in the conservation of species and in the responsible development of oil shale and oil and gas resources. Such expertise must be considered in the evaluation of data, the regulatory mechanisms available, and in the ability to generate and enforce a conservation agreement for both beardtongues.

Our Response: We used the best scientific and commercial information available for the purpose of making a final listing determination for Graham's and White River beardtongues, including the newly created 2014 CA, and we concluded that the species no longer meet the definitions of threatened or endangered species under the Act. We agree that Graham's and White River beardtongue conservation can be accomplished through the 2014 CA (see **Ongoing and Future Conservation Efforts**).

(29) Comment: The PLPCO and several commenters stated impacts to the species from oil shale and traditional oil and gas development in the future will be limited. The PLPCO cites a University of Utah study (2013) to support the growth projections of the industry, and concluded that development would remain minimal due to low natural gas prices; however, the study did not specify a timeframe for this projection. Even if development were to occur, the commenters believe we overstated its impact. Any projected drilling in beardtongue habitat will be for natural gas rather than oil. The PLPCO and another commenter stated promising new production techniques for oil shale

and tar sands will likely further reduce forecasted environmental impacts. Other commenters cited economic and technical uncertainties that call into question large-scale, rapid oil shale development on public and private lands.

Our Response: We used the best scientific and commercially available information for our analysis. Our analysis of energy development included the locations of traditional hydrocarbon resource deposits and oil shale and tar sands resources, plant abundance and habitat overlapping these areas, and the regulatory mechanisms in place to protect the beardtongues in these areas. While a high level of development within these species' habitats is not yet realized, we expect it to increase in the future, although we acknowledge some uncertainties regarding when oil shale and tar sands development will occur. A number of factors may limit the growth rate of the oil shale and traditional oil and gas industry, but these factors do not remove the likelihood of energy development in the future. We included the University of Utah (Institute for Clean and Secure Energy 2013, entire) study projections of likely industrial growth in our discussion of oil shale and tar sands in this document (see **Summary of Factors Affecting the Species**, Energy Exploration and Development). However, the 2014 CA provides significant conservation actions for the beardtongues on State, private, and Federal lands across their range (see **Ongoing and Future Conservation Efforts**). We determined that the conservation agreement measures will be effective at reducing threats to the beardtongues.

(30) Comment: The PLPCO, Duchesne County, and other commenters stated that we made erroneous factual assumptions about likely energy development on BLM lands

and its impact on the beardtongues. The commenters stated that the BLM determined no commercially viable technologies for oil shale extraction in Utah exist, and that BLM lands will not be available to leasing except in 160-acre increments under research, development, and demonstration (RD&D) leases. Only upon compliance with lease provisions would additional lands become available for commercial lease. Currently, there is only one active RD&D lease in Utah. Another commenter stated there are no actual proposals to develop oil shale from the vast majority of these parcels. Another commenter stated the Consolidated Appropriations Act of 2008 placed a Congressional moratorium on all Federal oil shale leasing.

Our Response: The BLM lands identified in the proposed rule and this withdrawal are based upon acreages potentially available for leasing as identified in the BLM Programmatic Oil Shale and Tar Sands Environmental Impact Statement (OSTEIS). While a high level of development within these species' habitats is not yet realized, we expect it to increase in the future because the Energy Policy Act of 2005 identifies the entire range of the beardtongues as a priority for oil shale and tar sands development, requires the establishment of a commercial leasing program, and increases the lease acreage restriction to 50,000 acres per individual or corporation. While the growth of the industry may be slow, this does not remove the likelihood of the threat from energy development in beardtongue habitat where energy resources exist. The Consolidated Appropriations Act of 2008 did not place a moratorium on oil shale leasing; however, it did specify that oil shale regulation development and leasing was not funded that year. However, the 2014 CA reduces the threat to Graham's and White River

beardtongues on BLM lands by establishing conservation areas where surface disturbance will be limited, and where plants will be buffered from surface disturbances by distances of 91.4 m (300 ft). Outside conservation areas on BLM lands, any surface disturbance will avoid plants by 91.4 m (300 ft). These measures sufficiently address the threats to both species from oil shale development.

(31) Comment: The PLPCO and other commenters believe we overstated impacts from potential oil shale development on State and private lands. The commenters stated that these projects are designed to minimize surface impacts and impairment of plant species and thus would limit disturbance to only a few thousand acres maximum at any one time. Additionally, the projects will transition from surface mining to underground mining depending upon the depth of the resource. Another commenter stated that the economic reality is that surface mining would not occur in areas with an average overburden greater than 30.5 m (100 ft), and the most commercially attractive areas for oil shale mining would be candidates for underground mining. Commenters further stated that the land occupied by surface mining at any one time would be a small fraction of the habitat area, and mining areas would be rapidly reclaimed.

Our Response: In our 2013 proposal, we assumed surface mining would occur where the overburden is less than 152 m (500 ft) deep. This is consistent with the Record of Decision for the OSTEIS, which stated surface mining of oil shale in Utah is allowed where the overburden is 0 to 500 ft thick. While a high level of development within these species' habitats is not yet realized, we expect it to increase in the future because the

Record of Decision for the OSTEIS identifies a large percentage of the range of the beardtongues for oil shale and tar sands development. In addition, we do not have documentation that reclaimed mined areas can support either beardtongue species. However, the 2014 CA provides significant conservation actions for both beardtongues on State, private, and Federal lands across their ranges (see **Ongoing and Future Conservation Efforts**). We determined that the 2014 CA measures will reduce threats to the beardtongues.

(32) Comment: The PLPCO and one other commenter stated we incorrectly indicated that no regulatory mechanisms exist with regard to Red Leaf's project on SITLA lands. The State permit for Red Leaf's project specifically includes protection for Graham's beardtongue.

Our Response: We appreciate the information regarding the permit for the Red Leaf project. Although the permit may provide some conservation benefits, we also note that Red Leaf's mining permit allows that most of the land surface will be disturbed by mining. Therefore, the long-term effectiveness of the measures described in the permit is uncertain. Although the 2014 CA does not provide protections for Graham's beardtongue on the property leased by Red Leaf, a sufficient number of plants are protected by the 2014 CA on BLM lands within that same population.

(33) Comment: The PLPCO and one other commenter concluded that we grossly overstated the footprint of the Enefit project and the number of plants contained therein

by failing to use accurate mine plan data that are publicly available. Commenters stated that surveys in 2013 of the Enefit South Project found 117 and 413 individuals of Graham's and White River beardtongue, respectively. These numbers represent 0.3 percent and 3 percent of known Graham's and White River beardtongue plants, respectively, rangewide rather than the 19 percent and 26 percent identified in the proposed rule. Enefit stated that their South Project will develop 2,833 ha to 3,642 ha (7,000 to 9,000 ac) rather than the 10,117 ha (25,000 ac) identified in the proposed rule.

Our Response: We used the best scientific and commercially available information for our analysis. Our analysis of the Enefit project was based upon total acreage that was either owned, leased, or optioned for lease by the company; the amount of plant abundance and habitat overlapping these areas; and the regulatory mechanisms to protect the beardtongues on these areas. We updated the information in this document to differentiate impacts from Enefit's South Project from the entire area owned, leased or optioned for lease by Enefit (see **Summary of Factors Affecting the Species**, Energy Exploration and Development).

(34) Comment: Several commenters stated there are sufficient regulatory mechanisms on BLM lands to protect the beardtongues, including protections through the OSTEIS and those applied as a BLM special status species. The PLPCO and SITLA stated that we provide no support for why we believe spatial buffers are not sufficient to minimize impacts to the beardtongues. Another commenter stated the BLM Vernal Field Office Resource Management Plan (RMP) creates a setback zone from the Mahogany

Ledge outcrop so this area believed to be of greatest concern is not available for leasing. The commenter stated that Graham's beardtongue survival can be adequately ensured through avoidance and revegetation. Another commenter and Duchesne County stated the Raven Ridge ACEC protects 87 percent of all known Graham's beardtongue plants in Colorado and is sufficient to protect the species. In the ACEC, motorized travel is restricted to existing roads and there is no surface occupancy restriction for new oil and gas leases. Additionally, commenters stated that we discounted existing efforts to protect the species by energy companies. Another commenter stated the majority of oil shale resources and the majority of known plants are on Federal land and thus the Federal leasing restrictions and imposed plant protections will be inherently limiting and protective.

Our Response: The protections in the OSTEIS apply only to plant species listed under the Act. The Vernal RMP does not create a setback zone from the Mahogany Ledge outcrop. However, landscape-level protections are included in the 2014 CA through the identification of conservation areas for the species rangewide (see **Ongoing and Future Conservation Efforts**) and by the Raven Ridge ACEC protections in Colorado.

(35) Comment: The PLPCO stated that, since the oil shale industry will develop gradually, we should consider a research program to determine the beardtongues' ability to be propagated and moved into reclaimed areas. Another commenter stated the

beardtongues are robust and would likely succeed in reseeding or transplanting efforts on reclaimed soils.

Our Response: We agree that additional research on this topic would be beneficial because restoration of plants of arid ecosystems remains largely unsuccessful and unproven. Additional studies are being planned through the 2014 CA to better assess the ability of the beardtongue species to establish and persist on disturbed or reclaimed soils (see **Ongoing and Future Conservation Efforts**).

(36) Comment: The PLPCO and SITLA stated that we failed to show that pristine, natural environments are necessary for the species' conservation, and it is speculative to conclude disturbance is detrimental to these species.

Our Response: Although individual plants may occupy some disturbed habitats, it is unlikely that these disturbed areas can support the species on an ecosystem level and support viable populations for the long-term. With very few exceptions, all sites where both beardtongue species occur are located in undisturbed soils. Additional studies are planned through the 2014 CA to better assess the ability of the beardtongue species to establish and persist on disturbed or reclaimed soils (see **Ongoing and Future Conservation Efforts**).

(37) Comment: The PLPCO, SITLA, and another commenter stated that our evidence for indirect effects and habitat fragmentation effects on the beardtongues is

speculative. One commenter stated that there is no clear evidence the environment is as fragmented as is implied. They stated that Graham's beardtongue colonies are already widely dispersed, which implies the species tolerates a high degree of fragmentation.

Our Response: We used information on the effects of habitat fragmentation on other similar plant species to infer what the effects would be to the beardtongues, because this represented the best available information. Some effects of habitat fragmentation include smaller and more isolated populations that have an increased risk of extinction, the potential for inbreeding depression, loss of genetic diversity, and lower sexual reproduction (see **Summary of Factors Affecting the Species**, Small Population Size). Although habitat fragmentation may not be currently high, we expect that, without the 2014 CA conservation actions, habitat fragmentation would increase in the future as large-scale surface mining and oil and gas development accelerates.

(38) Comment: The PLPCO, SITLA, and another commenter stated that we assume both species are tightly associated with the Mahogany Ledge within the Parachute Creek Member of the Green River formation, but plants occur far above and below this ledge and on various soil types.

Our Response: We acknowledge that not all individuals are found within the Mahogany Ledge feature. However, the majority of individuals, or approximately 63 percent and 69 percent of the total population of Graham's and White River beardtongues, respectively, are associated with the Mahogany Ledge feature.

(39) Comment: The PLPCO, SITLA, Duchesne County, and other commenters stated that we characterized the magnitude of the potential threats in terms of number of known populations or individuals while acknowledging the surveys for both species are incomplete. They further asserted that our understanding of the amount of potential habitat may be a substantial underestimation of the actual amount. Commenters stated that the predictive models for both species are pending and the model results will be based upon occurrences and data not considered in the proposed rule. One commenter stated that only a small portion of Graham's beardtongue habitat, perhaps less than 1 percent, across its range has been surveyed and thus it is fair to assume the species can be in areas that have not been surveyed. The commenter asserted that these errors and omissions emphasize our limited understanding of the species' distributions.

Our Response: We are required to use the best available information when evaluating a species' status and making a listing determination. We considered the predictive models during this analysis and agree there is additional potential habitat for both species. However, we based our determination on known information about the species, which includes survey data showing the extent and abundance of the species. Unsurveyed suitable habitat may increase both the known distribution and total population numbers for both species in the future.

(40) Comment: The PLPCO and SITLA questioned our methods to determine Element Occurrences (EOs) to delineate populations for the beardtongues when the

pollinator travel distances differ from the EO delineation distance. The PLPCO stated the EO construct muddles a realistic discussion of the discontinuous distribution of the two species, does not allow the effects of activities to be weighed against actual plant locations, and thereby overstates the alleged fragmentation of habitat, establishes a completely false sense of accuracy, and does not use the best available data. Furthermore, commenters stated we do not provide information regarding the ecological significance of EOs, and PLPCO questioned why we did not use EOs in the threat analysis but rather individual plant numbers. The PLPCO urged us to map the populations realistically for an accurate threat analysis.

Our Response: We used EOs to characterize the number of populations for the beardtongues because it is a standard protocol for delineating populations used by the State of Utah Heritage Program as well as other States' native plant programs (see **Background—Graham's beardtongue**, Distribution), and we find this an acceptable, biologically-based method to define populations. Much of the location data we received as point locations do not reflect the actual plant distribution across the landscape because in many cases one point represents many plants distributed over varying areas. Thus, we rely on EOs because of the discrepancy in the data and its standard use to delineate populations.

(41) Comment: The PLPCO and another commenter disagreed with our conclusion that the proposed Enefit oil shale project will reduce connectivity between Utah and Colorado Graham's beardtongue populations. They argue the current distance

between populations 19 and 20 is 6.8 km (4.2 m), which is nearly 10 times the pollinator distance needed to maintain gene flow and connectivity between populations. The current pollinator distances of 700 m for Graham's beardtongue and 500 m for White River beardtongues are less than 6.8 km (4.2 m), so therefore any disturbance between these populations will not fragment populations that are not connected by pollinators.

Our Response: We can infer that gene flow must be occurring between these populations, because otherwise they would be different species, or diverging from the species. Graham's beardtongue pollinators are capable of travelling at least 700 meters (see **Background—Graham's beardtongue**, Biology) during foraging. However, pollinator dispersal distances can occur over a greater distance than foraging distance; dispersal distances for pollinator's of Graham's beardtongue pollinators are not known but long-distance dispersal is important for pollinators to ensure access to adequate resources (Tepedino 2014, entire). In addition, unsurveyed areas between populations 19 and 20 may contain occurrences of Graham's and White River beardtongue plants that are important for providing connectivity. We used genetic studies from other plant species, comprising the best information available, to infer the effects of habitat fragmentation on gene flow between beardtongue populations (see Small Population Size, below).

(42) *Comment:* The PLPCO disagreed with our conclusion that indirect factors of pollinator limitation, dust, invasive weeds, grazing, small population size, and climate change pose a threat cumulatively. They contend that we have not demonstrated any

impacts from any of these factors because neither species appears to suffer from pollinator limitations, dust, or invasive weeds.

Our Response: We stated in the 2013 proposed rule that the two beardtongues have stable populations and that substantial threats are currently not occurring. As such, we determined that livestock grazing, invasive weeds, small population sizes and climate change were not a threat in themselves, but when combined with energy development were a cumulative threat to the species. However, we concluded that barring additional conservation measures, threats would be likely to occur in the future, at a high intensity, and across both species' entire ranges. Our conclusions were based on future impacts to the species that would occur in concert with energy development. Furthermore, we discussed pollinator limitation as a negative effect of habitat fragmentation due to the threat of energy development.

(43) Comment: The PLPCO, SITLA, Duchesne County, and other commenters stated the proposed pollinator buffers are too large and not supported by science. They stated that we did not demonstrate that smaller pollination buffers would be insufficient.

Our Response: We used the best scientific and commercial information available to identify the pollinators of both beardtongues, identify the habitat requirements necessary to support these pollinators, and quantify their foraging distances to inform the pollinator buffer distance for both beardtongues (see **Background—Graham's beardtongue, Biology**, and **Background—White River beardtongue, Biology**).

(44) Comment: The PLPCO and SITLA stated the literature to support our assumption that pollinators will not cross roads or other disturbed areas is speculative. They stated that the pollinator studies cited have no relevance to species, ecological communities, or conditions in the Uinta Basin.

Our Response: We used the best scientific and commercial information available to identify the behavior of beardtongue pollinators in disturbed areas (see **Summary of Factors Affecting the Species I. Energy Exploration and Development**). The best available information includes studies from outside of the Uinta Basin that were used to infer the effects to beardtongue pollinators.

(45) Comment: The PLPCO, SITLA and other commenters stated that we did not indicate whether the higher level of reproduction resulting from cross-pollination is necessary to maintain viable populations. They noted that our proposed rule concluded that low pollinator visitation for White River beardtongue was not considered a limiting factor.

Our Response: Cross-pollinated flowers produce more seeds and fruits than self-pollinated flowers in these species (Dodge and Yates 2009, p. 18; Lewinsohn and Tepedino 2007, p. 234). Since both beardtongues benefit from cross-pollination, it is important to maintain pollinator populations so that beardtongue seed production and

genetic diversity are maximized. However, the establishment of conservation areas for both species will provide pollinator habitat and corridors between populations.

(46) Comment: The PLPCO and SITLA stated we did not indicate what “sufficiently large numbers or population distribution” means in the context of preventing inbreeding depression in Graham’s beardtongue.

Our Response: We assessed the effects from inbreeding depression based upon studies from other plant species because they comprised the best information available at the time. However, we did not attempt to apply the population size or distribution recommendations from these other studies to the beardtongues because those values are species specific. Therefore, we provided a general discussion regarding inbreeding depression. However, we do not believe that inbreeding depression is a threat because there are sufficient large populations of Graham’s beardtongue protected within conservation areas that allow for a large reservoir of genetic diversity.

(47) Comment: The PLPCO and SITLA and another commenter stated that we did not demonstrate that weeds are a threat or increase the risk of catastrophic wildfire. The PLPCO, SITLA, and another commenter stated the presence of weeds in adjacent habitat does not suggest they will encroach in actual beardtongue habitat. They further stated that weeds are unlikely to out-compete the beardtongues or increase the wildfire risk. One commenter stated that Graham’s beardtongue habitat is open and generally

devoid of other plant species, suggesting the habitat provides some immunity to crowding from invasive weeds.

Our Response: In our 2013 proposed rule, we documented that weeds alter the frequency, intensity, extent, type, and seasonality of fires (see **Summary of Factors Affecting the Species**, Invasive Weeds). While weeds are not abundant in beardtongue habitat, they are present, and are abundant in adjacent habitat and where soil disturbance occurs. We considered weeds a future threat in our 2013 proposed rule because the amount of energy development, and associated soil disturbance, expected to occur across these species' ranges is likely to increase weed prevalence within beardtongue habitat, as well as the likelihood that weeds will increase with climate change. However, in this final rule we determined that the 2014 CA actions will be effective at eliminating or reducing threats to the beardtongues, including the potential threat from weeds.

(48) Comment: The PLPCO and SITLA stated that we concluded dust can negatively affect plants, but we did not provide information on: (1) the amount of dust deposited at what distance; (2) the extent to which dust deposition may adversely affect beardtongue growth and reproduction; and (3) whether those adverse effects are likely to reduce the viability of the species. They further stated that stability of two beardtongue research plots adjacent to unpaved roads suggests the effects of fugitive dust may not be significantly adverse to individual plants even on a cumulative basis. Thus, it is speculative to conclude the disturbance from dust is detrimental to these species.

Our Response: Based on existing studies that examined the effects of dust on plants, including those in the Uinta Basin, we found that dust can affect plants up to 1,000 m (3280 ft) away with greater effects closer to the disturbance (Service 2014a, entire). Effects of fugitive dust include changes in species composition, altered soil properties, blocked stomata, reduced foraging capacity of pollinators, dehydration, reduced reproductive output, and a decline in reproductive fitness (see **Summary of Factors Affecting the Species**, Energy Exploration). However, the establishment of conservation areas that limit disturbance, and the use of spatial disturbance buffers of 91.4 m (300 ft) from plants within conservation areas and on all BLM lands, reduce dust generation near both species thus reducing the threat from dust. The 91.4 m (300-ft) buffer from disturbance will ensure that the greatest impacts from dust, which occur closest to the disturbance, will be reduced.

(49) Comment: The PLPCO and other commenters stated that substantial problems exist with the scientific conclusions and logic concerning the effects of climate change. They contend that, because we acknowledged the correct environmental factors driving reproduction and survival of the beardtongues have not been measured, we have inaccurately characterized the species' population status and trends. Another commenter stated our argument that climate change impacts will be more severe if energy development destroys and fragments the habitat is speculation and not a basis for finding a cumulative threat to the species. They further stated we provided no factual support that climate change is likely to augment the ability of invasive plants to outcompete native plants.

Our Response: Climate change is occurring, and there is strong scientific support for projections that warming will continue through the 21st century (see **Climate Change** under *Factor E.*). While down-scaled climate models of the Uinta Basin are not available, annual mean precipitation levels are projected to decrease, and air temperatures and periods of drought are expected to increase in western North America. Because the scientific literature, including the citations PLPCO provided in their comments, indicate the importance of precipitation for plant recruitment, we considered future precipitation patterns in our analysis of climate change and the likely reduction of plant recruitment under reduced precipitation and increased incidence of drought. Additionally, soils are expected to dry more rapidly because of increased temperatures and this is likely to result in reduced soil moisture levels in beardtongue habitat (see **Summary of Factors Affecting the Species**, Climate Change). Climate change impacts likely will be more severe if oil and gas development destroys and fragments the habitat. Development activities in currently unoccupied but suitable habitat for the species could limit the potential range expansion or shifts necessary for both species to adapt to climate change. The 2014 CA creates conservation areas that limit surface disturbance and create spatial buffers so that the cumulative effects of energy development, livestock grazing, small population sizes, invasive weeds, and climate change are reduced.

(50) Comment: The PLPCO and SITLA stated that demographic studies (McCaffery 2013a; Reisor and Yates 2011) do not incorporate acceptable sample sizes and analyses as defined by Morris and Doak (2002). Both commenters provided

additional citations relevant to population models. They raise several concerns, including: (1) limited study locations that do not represent the species' ranges and, therefore, the potential range of demographic variability and environmental stochasticity; (2) the sample contains large detection errors that limit the applicability and statistical rigor of the analyses and are not accounted for in the Population Viability Analysis (McLoughlin and Messier 2004); and (3) the population trend and condition cannot be accurately derived from the study data. Therefore, they contend that a minimum population size for these species cannot accurately be determined.

Our Response: We acknowledge the limitations inherent in the demographic studies on both beardtongue species. We used the best scientific and commercial information available to assess population status and trends for the beardtongues. The demographic studies we cited provide the only long-term population information for both species, and we considered and included those study results in our analysis. We did not establish a minimum population size for either species in our proposed rule or this document; rather, we stated that populations of either species with fewer than 150 individuals are more prone to extinction from stochastic events (see **Summary of Factors Affecting the Species**, Small Population Size).

(51) Comment: The PLPCO and another commenter stated that our assertion that future development will contribute to genetic isolation and reduced adaptive capacity of small populations is not supported. They contend that it is reasonable to assume that both

species, as edaphic (soil-related) endemics, are naturally rare and have always occurred in small, isolated populations, and thus genetic effects from isolation may be minimal.

Our Response: We agree that both beardtongues are edaphic endemics that were historically rare. We used genetic studies from other plant species, comprising the best information available at the time, to infer the effects of habitat fragmentation on gene flow within and between beardtongue populations. We determined it is incorrect to assume no gene flow is occurring between populations without genetic studies.

(52) Comment: The PLPCO and SITLA stated that, according to the Service, the conservation needs of the species were based upon “expert workshops” rather than actual, available data; and so they suggest that the Service should acknowledge that the best available information may not be sufficient to support the proposed determination.

Our Response: We used information from scientists with expertise in botany and specific knowledge of one or both species, in addition to published literature and data, where available, to evaluate the best available scientific information for both beardtongues in order to complete a status assessment and determine the resource needs for species viability.

(53) Comment: The PLPCO stated that we misapplied an existing conservation agreement for the species and did not consider recent efforts to develop a new agreement.

The County, State, BLM, and affected industries have been working together to build a comprehensive conservation plan for the two species.

Our Response: We agree that Graham's and White River beardtongue conservation should be pursued by State, local, private, and Federal agencies, and actions to achieve this objective are detailed in the 2014 CA (see **Ongoing and Future Conservation Efforts**). The 2014 CA provides significant conservation actions to benefit Graham's and White River beardtongue. Conservation measures in the 2007 Conservation Agreement were considered in the proposal, but did not contain sufficient conservation actions to address threats to the species.

(54) Comment: The SITLA provided citations of scientific literature that they believe were relevant to our analysis in the 2013 proposed rule, but were not included in the proposed rule.

Our Response: We appreciate the additional citations to support the analysis in the 2013 proposed rule. We have reviewed the information in these studies, but were not able to apply them to this document as they were general in nature and did not specifically address the Graham's and White River beardtongue species or the threats they may face.

(55) Comment: Rio Blanco County stated that listing is unnecessary, the proposed rule failed to demonstrate these beardtongue species are being impacted, and

our analysis was speculative with respect to impacts identified to occur in the future. The County believed we were attempting to exclude energy development from the area rather than cooperatively seeking effective mitigation measures for developers to demonstrate they can avoid or mitigate such impacts. The County strongly recommended that we consult with the BLM on the conservation of the beardtongues.

Our Response: In our 2013 proposed rule, we stated that the beardtongues were stable species and that substantial threats were currently not occurring. However, we further stated that threats were likely to occur in the future, at a high intensity and across both species' entire ranges. We have worked cooperatively with various stakeholders, including the BLM, to finalize the 2014 CA to address these identified threats (see **Ongoing and Future Conservation Efforts**). We determined that the 2014 CA measures will be effective at eliminating or reducing threats to the beardtongues.

(56) Comment: Rio Blanco and Carbon counties stated that grazing permittees will be negatively impacted by the proposed rule. They contend that the potential impact and trampling damage from large deer and elk populations were only briefly mentioned, but many beardtongue populations overlap with summer and winter range for mule deer and elk. Additionally, they contend that this area has a huge population of wild horses and it was a flaw not to include this information in the proposed rule.

Our Response: In the 2013 proposed rule, we stated that livestock were likely not the primary grazers of Graham's and White River beardtongue. We updated the section

in this document to clarify that wild horses use the habitat areas. We mention some herbivory was attributed to deer (see **Summary of Factors Affecting the Species, Grazing and Trampling**). We do not have data showing the presence or impacts from elk in beardtongue habitat.

(57) Comment: One commenter stated that we failed to discuss obvious management measures to address fragmentation and gene flow. They cited a court case (*CBD v. Norton*, 411F. Supp. 2d 1271, 1290 (D.N.M. 2005)) where the district court rejected arguments that a cutthroat trout species was threatened with extinction from habitat fragmentation and inbreeding because the threat could be “alleviated by management activities” including transplantation.

Our Response: Transplanting and propagation as management activities to address fragmentation and gene flow of either beardtongue species have not been proven to be effective in conserving either species. However, we worked cooperatively with various stakeholders to finalize the 2014 CA, which is considered in this document. This agreement identifies significant conservation actions for both beardtongues on State, private, and Federal lands across their ranges, including the mediation of habitat fragmentation and reduced population connectivity (*see* Table 1 and **Ongoing and Future Conservation Efforts**).

(58) Comment: Several commenters stated that we provided insufficient evidence that grazing is a threat to the beardtongues in the proposed rule. One commenter stated

that we provided no scientific or field evidence that disease or predation (Factor C) is a threat. Commenters contend that the grazing of grasses is believed to have enhanced the habitat for Graham's beardtongue.

Our Response: We considered predation from many sources in our proposed rule, including grazing by livestock. We concluded in our proposed rule that livestock grazing only impacts the beardtongues when considered cumulatively with increased energy development, invasive weeds, small population sizes, and climate change. We did not consider disease to be a threat to either species, as the best available information does not suggest that disease is impacting Graham's or White River beardtongues. In this listing withdrawal, we have determined that the 2014 CA measures will be effective at reducing threats to the beardtongues.

(59) Comment: SITLA and several other commenters stated that we demonstrated population numbers and increases sufficient for these species to remain viable into the future. The commenters stated that the Service and experts agree that both species are stable, thus a listing under the Act is premature, as we should not base a listing on either insufficient data regarding the species' population or populations that are not declining. The commenters stated that as more surveys are conducted, more plants are found, and this demonstrates that the population trends are increasing. The commenters noted that these population increases occurred while the plants faced the same threats that were analyzed in the proposed rules. The commenters stated we must consider these population increases in our listing determination.

Our Response: As survey effort and area has increased, so has the number of plants that have been found. However, an increase in the population due to increased survey area and effort does not indicate that the population is increasing, and we do not have any information to suggest that populations of either species are increasing. Population trends such as increases and decreases are determined by monitoring known occurrences over a period of time. The monitoring data that we evaluated shows that populations for Graham's beardtongue are stable and populations of White River beardtongue are stable or close to stable (McCaffery 2013a, entire; BLM 2011, p. 6-7).

In the 2013 proposed rule, we stated the beardtongues have stable populations, but faced many threats. Our analysis of the threats, not just the population size, led to our proposed determination of threatened status for the species. In the 2013 proposed rule, we concluded that, while current threats from energy development are low, these threats are expected to increase in intensity, magnitude, and severity across the range of both species so that they are likely to become endangered in the foreseeable future. The 2014 CA was developed to reduce these and other threats to both beardtongue species.

(60) Comment: One commenter stated they are concerned that we proposed to list a plant variety, rather than a species or subspecies. The commenter requested that we perform a more thorough analysis of the uniqueness of White River beardtongue before we conclude this status review.

Our Response: White River beardtongue is one of four varieties of Plateau beardtongue (*Penstemon scariosus*). White River beardtongue is differentiated from the other three varieties of Plateau beardtongue primarily by morphological and geologic substrate differences. The use of the term variety in this instance is equivalent to the definition of a subspecies, which is a taxonomic subunit of a species. Under the Act there are three listable entities: species, subspecies, and distinct population segments. Because White River beardtongue is a subspecies, it is a listable entity under the Act.

(61) Comment: Two commenters stated there is no evidence the Graham's beardtongue population has suffered from gathering or overutilization (Factor B). The commenters noted that seeds and propagation information are available online, and that the species is highly responsive to cultivation in alpine gardens, which indicates the species will respond successfully to revegetation and reclamation measures.

Our Response: We did not consider unauthorized collection to be a threat to either beardtongue species (see **Unauthorized Collection**). We know of no successful ecological restoration efforts involving either species or of their habitat. Other more common beardtongue species are easily cultivated, but we know of no work that has been conducted on the propagation and restoration of Graham's and White River beardtongues.

(62) Comment: One commenter stated that anytime there is a listing under the Act, we are stifling the wise use of natural resources. Another commenter stated the

listing under the Act may not be the best way to ensure survival of the species. Survival would be better assured through well-considered mitigation and reclamation design.

Our Response: Under the Act, we must list a species if the best available scientific and commercial information indicates that it meets the definition of a threatened or endangered species.

(63) Comment: One commenter stated the penstemon expert meeting notes did not support the Service's conclusion of threatened status. Additionally, they were concerned that the comment period for the proposed rule did not coincide with the flowering period of either plant, so it was not possible to confirm or refute population data.

Our Response: We did not solicit the experts' opinions regarding whether listing under the Act was warranted. The purpose of the meeting was to evaluate the best available scientific information for the beardtongues. We reopened the comment period from May 6 –July 7, 2014, to accommodate additional time for the public to make comments. This second comment period overlapped flowering for both beardtongue species, which occurs from May through June.

(64) Comment: Two commenters stated their support for the listing of both beardtongues. One commenter stated that the ecosystem is not resilient enough to withstand a decline in biodiversity, and the beardtongues fulfill a very specific niche.

The limited range of both beardtongues is a concern, and their low recruitment makes them naturally vulnerable. There is likely no protection on State and private lands from energy development, and impacts on these lands would increase fragmentation of remaining habitat at a landscape scale. Habitat impacts can have a systemic impact on the entire ecosystem beginning with the bee pollinators. Climate change would likely serve as an added stressor. One of the commenters supports the protection of ecologically meaningful core areas to maintain pollinator and plant diversity. They conclude that the argument to protect biological diversity of the oil shale barrens is a strong one and should be considered.

Our Response: Our 2013 proposed critical habitat rule (78 FR 47832) for the beardtongues recognized the importance of preserving plant diversity and pollinators in beardtongue habitat. In the 2014 CA, we identified landscape-level protections necessary to protect the beardtongue species and their pollinators from indirect and cumulative impacts (see **Ongoing and Future Conservation Efforts**) by establishing conservation areas, surface disturbance limits, avoidance buffers, and measures to address livestock grazing, invasive weeds, small population size, and climate change. The conservation areas provide connectivity between occurrences and protect large populations that will serve as a core area for the conservation of both species. Other incremental stressors will also be addressed individually in order to reduce the cumulative threats that may be acting on both species.

(65) Comment: One commenter stated the existing protections on BLM lands are not adequate to assure the persistence of the beardtongues. A 150-foot buffer is inadequate, and the Vernal RMP does not require avoidance of plants.

Our Response: Conservation areas established in the 2014 CA include adequate buffers (91.4 m [300 ft]) and surface disturbance limits (see **Ongoing and Future Conservation Efforts**).

(66) Comment: Carbon County asked us to consider the economic impacts to people and local economies from the delay or prevention of energy resource development as a result of a listing of either species. One commenter stated that restricting development is in direct conflict with our Nation's energy policy. The commenter was concerned that he/she would need to obtain a Federal air quality permit, which may include restrictions associated with these listings. This outcome would potentially stop oil and gas and oil shale mining activities on their land and impact their family income in excess of \$1 million annually. The commenter indicated that, given the incomplete status of data and understanding, perhaps a threatened species status at this time is premature.

Our Response: An economic screening analysis was completed for our proposed critical habitat designation; however, the Act does not allow us to consider economic impacts in our decision on whether to list a species. Because we are withdrawing the proposed listing and critical habitat rules, the impacts that the commenters are concerned about will not occur.

(67) Comment: Several commenters including Duchesne County, Uintah County and SITLA stated that they support the 2014 CA over a decision to list the two species under the Act, and stated that we should take the conservation measures in the 2014 CA into account in our determination of the status of the species. The reasons for their support are sorted into the following categories and explained in greater detail below:

1. Threats: The commenters stated that we do not fully know the range and habitat of the two beardtongue species. They concluded that enacting the 2014 CA (instead of listing the species) would allow time for more surveys so that we will better understand the species population, habitat, and distribution, and allow for conducting transplant and restoration studies on disturbed lands. Also, the commenters concluded that the 2014 CA affords the species landscape-level protection, by including state and private lands in conservation areas.
2. Conservation on non-federal lands: The commenters concluded that the 2014 CA affords more protection for both beardtongue species than a listing under the Act, with less economic impact. Under the Act, listed plants are not protected on non-federal lands without a federal nexus; whereas, the commenters state that the 2014 CA provides legally binding protection on approximately 10,000 acres for both species on state and private lands. Additionally, they conclude that the 2014 CA promotes cooperation among landowners and managers.

3. Implementation and funding: Uintah County, SITLA, and PLPCO stated that they are committed to implementing the 2014 CA, and the State of Utah Endangered Species Mitigation Fund has enough funding to ensure success of the 2014 CA.
4. Timeframe: The commenters state that the 2014 CA can be reassessed at the end of the duration of the agreement and renewed if necessary, or the species can then be listed under Act.

Our Response: The Act does not allow us to consider economic impacts in decisions on whether to list a species under the Act. However, we agree that the 2014 CA provides significant conservation benefits to Graham's and White River beardtongues, including providing landscape-level protections through the inclusion of conservation area protections on non-federal lands; promoting cooperation with federal and non-federal partners; providing non-federal funding and commitments for the conservation of the species; and allowing for more time to better understand the species habitat, abundance, and demography. In addition, the 2014 CA protects 64 percent of the known occurrences of Graham's beardtongue and 76 percent of known occurrences of White River beardtongue throughout the species' ranges by establishing conservation areas where surface disturbance will be limited and plants will be avoided by 91.4 m (300 ft), or unavoidable impacts mitigated. The 2014 CA specifies that, on federal lands, both species will be protected by buffers of 91.4 m (300 ft) from surface disturbing activities both within and outside of conservation areas. Through our Policy for Evaluation of Conservation Efforts When Making Listing Decisions (PECE) (68 FR 15100, March 28,

2003) process, we determined that these protections were adequate to reduce the threats to the species such that they no longer warrant listing as threatened or endangered.

(68) Comment: The SITLA and one other commenter noted that technical experts concluded that current plant populations of both beardtongue species are stable and likely to persist into the future.

Our Response: We agree that the best available information shows that the monitored sites of Graham's and White River beardtongue appear to be stable (McCaffery 2013a, entire; BLM 2011, p. 6-7). We also concluded that both species of beardtongue are likely to persist into the future when considering the protections of the 2014 CA that reduce the threats to the species.

(69) Comment: The County Commission of Duchesne County stated that they object to the proposed rules to list Graham's and White River beardtongues and designate critical habitat because the proposed listing rules are not consistent with Duchesne County General Plan policies; the proposed rules are not consistent with State of Utah plans for the subject lands; and the proposed rules will economically adversely affect small businesses and governments.

Our Response: The Act does not allow us to consider economic impacts in decisions on whether to list species. Our proposed listing rules were based on an analysis of the threats to Grahams and White river beardtongues in accordance with the Act.

However, since publication of our proposed rules, we have developed a 2014 CA which reduces the threats to the species, and we have concluded that neither species warrants listing under the Act.

(70) Comment: Duchesne County asked to be included in the development of recovery plans.

Our Response: We welcome participation by any stakeholder in the development of conservation and recovery efforts for Graham's and White River beardtongues. However, recovery plans pursuant to the Act will not be necessary because we have determined that neither species warrants listing under the Act.

(71) Comment: Duchesne County stated that they expect the Service to recognize valid, existing rights including access within critical habitat, such as access to mineral rights.

Our response: We are withdrawing our proposed rules to list Graham's and White River beardtongues and designate critical habitat. Instead we have determined that the protections of the 2014 CA conserve the species through the designation of conservation areas to the point that these species no longer meet the definition of threatened or endangered. Landowners and managers where these conservation areas will be established are participating in the conservation agreement either directly or indirectly. Within these conservation areas valid, existing landowner rights, including access, will be

allowed, but controlled such that new surface disturbance does not occur within 91.4 m (300 ft) of plants, and surface disturbing activities are limited to 5 percent where Graham's beardtongue occurs and 2.5 percent where White River beardtongue occurs.

(72) Comment: Many commenters (including 4,890 form letters) supported the listing of Graham's and White River beardtongues because they believe the 2014 CA is not adequate to prevent extinction of both beardtongue species. Their reasons for supporting a listing are sorted into the following categories with further explanation:

1. Threats: The commenters stated that the conservation agreement does not prevent or reduce the threats to the species including those from energy development, road construction and maintenance, OHVs, and climate change; the 2014 CA will allow an increase of identified threats to the species in comparison to a listing of the species; the measures addressing grazing are vague and not adequate to conserve the species; the 2014 CA should enact mandatory buffers to protect the species and their habitat; conservation agreements are not as protective as a listing under the Act, especially compared to the protections under Section 9 of the Act; the 2014 CA has no benefits and possible negative impacts to the species on Federal lands; threats such as invasive species are not addressed and measures for these threats are unclear; neither species has protections on state and Federal lands; therefore, more protection is required on Federal lands; the 2014 CA does not provide assurances that impacts to the species will be reduced or mitigated; both beardtongue species are ranked by the UNPS as species of extremely high

concern, the highest priority category for conservation; and because both species are considered candidate species, they already meet the criteria for listing under the Act.

2. Buffers and disturbance thresholds: The commenters state that the 91.4 m (300 ft) buffer from surface disturbing activities as outlined in the 2014 CA is discretionary and inadequate to protect the plant and its pollinators, whereas the 700 m (2,297 ft) proposed critical habitat area surrounding known occurrences is more appropriate because it would protect pollinator habitat and genetic movement; buffers of at least 200 m (650 ft) are needed; the 2014 CA allows disturbance of 5 percent for Graham's beardtongue and 2.5 percent for White River beardtongue conservation areas, without a biological basis for allowing surface disturbance caps in the conservation areas; and the 2014 CA does not say how the conservation team will track surface disturbance levels.
3. Conservation Areas and critical habitat: The commenters are concerned that the conservation areas in the 2014 CA protect less acreage than the amount of area that was proposed for critical habitat; the larger area proposed for critical habitat was determined in our proposed rule to be "essential to the conservation of the species" and protects the species on a landscape level, including protecting pollinator nesting sites and secondary floral resources; the 2014 CA protects only 76 percent of the population of White River beardtongue and 64 percent of the population of Graham's beardtongue, which the commenters believed was

insufficient; the 2014 CA does not provide for the redundancy, resiliency, and representation of either species; and the 2014 CA does not include suitable habitat to address the threat of climate change.

4. Timeframe: The commenters expressed concern that the interim conservation areas are not protected over a long enough term and may be developed at any time; additional habitat loss and fragmentation can negatively affect small populations; the 15-year term of the agreement is too short to recover the species whereas a listing under the Act provides protections until the species is recovered; and the agreement terminates if either species is listed.
5. Implementation and funding: The commenters stated that the 2014 CA relies on future, voluntary, and unfunded conservation measures that have not been implemented, shown to be effective, and have no certainty of implementation; private landowners have not authorized conservation measures on their lands; the 2014 CA does not include an implementation plan; conservation measures such as transplanting and habitat restoration are unproven; there is no funding identified for all the tasks; voluntary conservation agreements are not proven to adequately protect species from extinction whereas protections under the Act, including listing, have a 99 percent success rate of preventing extinction; the State of Utah has not committed adequate resources or authority for implementing the 2014 CA; and listing under the Act would be better because it requires recovery planning and Federal funding.

6. Conservation team: The commenters expressed concern that the conservation team does not include representatives from all stakeholders, including those from the Utah and Colorado Natural Heritage Programs, Uinta Basin Rare Plant Forum, Red Butte Garden, Utah Division of Oil Gas and Mining, Utah State Lands and Forestry, Utah Division of Wildlife, beardtongue experts, and environmental advocacy groups; the conservation team lacks the expertise to carry out the 2014 CA; the state as a signatory to the agreement does not apply a scientific approach to other natural resource matters; the duties of the conservation team are not adequate to implement all the tasks outlined; the conservation team has not been identified or funded; and the County and State have not previously participated or cooperated in ongoing efforts to conserve rare plant species across the state or in Uintah County.
7. Other: The commenters noted that the 2014 CA was developed without public input and all interested stakeholders; the 2014 CA sets a bad precedent; and pursuing a conservation agreement wastes taxpayer's money since this is the third time the species has been proposed for listing under the Act.

Our Response: We used our Policy for Evaluation of Conservation Efforts When Making Listing Decisions to evaluate the certainty that the conservation measures in the 2014 CA will be implemented and effective at reducing threats to Graham's and White River beardtongues. We concluded that the conservation measures in the 2014 CA have

a high certainty of being implemented and effective. Our detailed PECE analysis is available for review at <http://www.regulations.gov> and <http://www.fws.gov/mountain-prairie/species/plants/2utahbeardtongues/>. See the Ongoing and Future Conservation Efforts and PECE Analysis sections below for more information. Our response to the comments in each category listed above is as follows:—

1. Threats: The 2014 CA reduces the threats to the species by providing protections from energy development, invasive weeds, climate change, and small population sizes through the establishment of 44,373 acres of conservation areas where surface disturbance is limited, and where disturbance occurs, it will avoid plants by 91.4 m (300 ft). In addition, the 2014 CA provides for protections of both species on non-federal lands in key units (conservation areas) that would otherwise not be protected unless a federal nexus occurred. Under Section 9 of the Act, listed plants do not receive protections on non-federal lands unless a federal nexus applies. Therefore, even if listed, many plants occurring on non-federal lands may still be vulnerable to the identified threats. In the 2014 CA, threats from grazing are addressed through a monitoring and adaptive management process where BLM will assess and reduce livestock impacts where they occur. Additional threats from invasive species are reduced through the development and implementation of a weed management plan. OHV use was not considered a threat to the species in our proposed rule; however, establishment of conservation areas and BLM management of their lands for the beardtongue

species will minimize the effects of OHVs through consideration of the needs for protection of both species during the development of the BLM travel management plan.

2. Buffers and Disturbance Caps: We have revised the language in the 2014 CA to ensure that adherence to the 91.4 m (300 ft) avoidance buffers is mandatory, rather than discretionary, and exceptions will only be allowed when it is beneficial for the species or its habitat and approved by the conservation team on non-federal lands, or after conference with the USFWS on federal lands (Table 4). The 91.4 m (300 ft) avoidance buffers were selected to protect the species from the effects of surface-disturbing activities because this is the buffer distance that is currently being used under Section 7 consultations under the Act in the Uinta Basin in Utah to avoid direct and indirect effects that are likely to adversely impact listed plant species. This buffer distance is based on a review of literature that shows that, although the effects of dust can extend out to 1,000 m (3,281 ft), and ground disturbance may have additional effects out to 2,000 m (6,562 ft), the greatest impacts occur closer to the disturbance. Thus, 91.4 m (300 ft) was selected to balance the protection of the species with energy development (Service 2014a, entire). Surface disturbance caps of 2.5 percent for White River beardtongue and 5 percent for Graham's beardtongue were selected to minimize habitat fragmentation that can occur from full field (40-acre spacing) development, which results in 13 percent surface disturbance. We will calculate surface

disturbing activities as explained in the 2014 CA (Table 4, conservation action 1) by tracking activities that require a permit, include permanent structures, or construction or expansion of new or existing roads.

3. The acreage included in the conservation areas is less than the acreage that we proposed as critical habitat; the proposed critical habitat for the two beardtongue species overlap, and total 75,846 acres. However, critical habitat protections for plants do not apply on non-federal lands without a federal action; therefore, proposed critical habitat on federal lands alone would typically apply to only 49 percent of the population of Graham's beardtongue and 60 percent of the population for White River beardtongue. The 2014 CA protects a greater number of plants by protecting 64 percent of Graham's beardtongue plants and 76 percent of White River beardtongue plants on both federal and non-federal lands. In addition, the conservation areas are strategically placed to provide habitat connectivity, thereby conserving the resiliency, redundancy, and representation of the species across their ranges (Figure 3; Table 3). The 2014 CA conservation areas include unoccupied habitat on slopes of various aspects that may allow the species to adapt to chosen microhabitats as the climate changes. There are many ways to achieve conservation of these two species. The proposed critical habitat designation identified all populations, with the understanding that critical habitat would not convey or guarantee conservation. The 2014 CA conserves a smaller

amount of habitat, but provides greater protection because it actually conserves a greater percentage of the population.

4. Timeframe: We did not rely on the interim conservation areas for our PECE analysis and final determination because the interim conservation areas are subject to development at any time and do not provide certainty of protection for either species. The timeframe of the 2014 CA is 15 years. During this time we hope to better understand the intensity, magnitude, and scale of the threats to both beardtongue species including those from energy and oil shale development. At any time during or near the end of the 15 years, parties to the agreement can choose to continue with and renew the conservation agreement. If during or after this timeframe, either species meets the definition of threatened or endangered, we can act to protect the species through the listing process. If the beardtongue species are listed under the Act, the 2014 CA expires automatically to avoid a situation where the parties are bound to both the commitments in this agreement and the potentially additive requirements of the Act. This conservation framework provides a consistent regulatory framework for landowners or managers who may be affected, while still protecting the beardtongue species under either scenario.
5. Implementation and funding: Through our PECE analysis process we found that the 2014 CA has a high certainty of being implemented and effective. Our detailed PECE analysis is available for review at

<http://www.regulations.gov> and <http://www.fws.gov/mountain-prairie/species/plants/2utahbeardtongues/>.

6. Although the signatories to the conservation agreement include federal, state, and county governments, we welcome participation by any stakeholder or beardtongue expert to provide relevant information and express their viewpoint in the process of administering the 2014 CA. We will reach out to others with knowledge about the two beardtongue species and landowners to ensure they have an opportunity to participate in the conservation of the species as we implement the 2014 CA. Funding for the implementation of the agreement, such as for establishing conservation areas, will be supplied by the various signatories through in-kind services and each land owner or manager will provide funding for conservation measures on their lands, such as surveys prior to surface disturbing activities. The conservation team includes botanists from the BLM and USFWS who are well qualified to provide botanical expertise.
7. The 2014 CA was developed by county, state and federal entities that have the authority to regulate and permit activities on lands within their jurisdiction that overlap with Graham's and White River beardtongue habitat. The protections in the 2014 CA were analyzed through our PECE process and found to have a high certainty of implementation and effectiveness.

(73) Comment: A couple of commenters asked us to identify which areas were subject to the 5 percent disturbance limit cap and which areas are subject to the 2.5 percent disturbance limits cap and to make this information public. In addition, one commenter asked for clarification about whether the disturbance caps applied per unit or per landowner. One commenter stated that this information must be available for public comment before the agreement can be finalized.

Our response: We provided a map of the conservation areas (Figure 3; also included in the 2014 CA) showing the areas where the different disturbance caps apply. The disturbance caps apply per landowner per unit (units are shown on Figure 3). The conservation agreement is a voluntary agreement and may be finalized without public comment, although we made the 2014 CA available for comment during our public comment period on the proposed rules and associated draft economic analysis and draft environmental assessment of critical habitat.

(74) Comment: One commenter does not agree that the designation of conservation areas or the surface disturbance cap of 5 percent for Graham's beardtongue and 2.5 percent for White River beardtongue included in the 2014 CA is necessary for the protection of either beardtongue species because they do not agree with the science used to support these protections.

Our response: In our proposed rule, we used the best available information to support our conclusions that both Graham's and White River beardtongue need

landscape-level conservation and protections, particularly from full-field energy development. The establishment of conservation areas provides the necessary landscape-level conservation, and the surface disturbance caps protect both beardtongue species from full-field development.

(75) Comment: One commenter stated that the Service did not follow its own guidance and policy regarding the peer review process for the proposed rules, citing the Service's Information Quality and Peer Review Guidelines (revised June 2012) implementing the Office of Management and Budget's December 16, 2004 Final Information Quality Bulletin for Peer Review. The commenter concluded that the peer review that was conducted by the Service for these proposed rules is not adequate because the peer reviewers did not fully analyze the scientific information presented in the proposed rules nor did they point out important flaws in the Service's analysis. At least one peer reviewer was not objective in their review because they are negative toward the oil and gas industry.

Our Response: As outlined in the proposed rule, we followed our peer review guidance and process for the proposed rules (59 FR 34270; July 1, 1994). We requested peer review from seven peer reviewers, all of whom are knowledgeable about the two beardtongue species. We received completed peer reviews of the proposed rules from four of these peer reviewers. These peer review comments are included in our administrative record and are available at www.regulations.gov. We reviewed the documentation provided by the commenter regarding the objectivity of one of the peer

reviewers and did not find a conflict. That peer reviewer, as a citizen, submitted a letter to the Colorado Oil and Gas Conservation Commission in support of a larger setback for oil and gas drilling from residential homes. We do not view this action as compromising the objectivity of a peer review of our proposed rules.

(76) Comment: One commenter asked us to state the value of the conservation areas to the conservation of the two species: specifically, whether the conservation areas protect known occurrences or only suitable habitat.

Our Response: The conservation areas protect both known occurrences and unoccupied suitable habitat. Of the known occurrences, the conservation areas encompass and protect 64 percent of Graham’s beardtongue plants and 76 percent of White River beardtongue plants.

(77) Comment: One commenter questions the ability of the conservation team to accomplish all the tasks identified in the 2014 CA, given the lack of knowledge and experience of the conservation team members and lack of funding. The commenter requested that we determine minimum qualifications for conservation team members as well as identified funding.

Our Response: We conclude that the conservation team has the knowledge and ability to carry out the conservation measures in the conservation agreement. The main protection in the 2014 CA is the establishment of conservation areas, which the

signatories to the agreement have the authority and ability to implement. The BLM has sufficient expertise in controlling invasive weeds and monitoring and managing livestock impacts to the species because they have been managing grazing allotments since the passage of the Taylor Grazing Act of 1934, and now manage under the Federal Land Management and Policy Act of 1976. We have developed guidelines for surveying and monitoring Federally listed and candidate plant species (Service 2011, entire), and these guidelines will be used to monitor Graham's and White River beardtongues as committed to in the 2014 CA. The BLM has funded and continues to fund demographic monitoring of both species and management of energy development and sensitive plant species protection on their lands. Uintah County and Utah DNR have funded surveys for both beardtongue species over multiple years.

(78) Comment: One commenter questioned whether the populations we report in the 2014 CA for both Graham's and White River beardtongues are genets (i.e., colonies of clones sharing identical genes reproduced vegetatively from the same individual) or ramets (i.e., individual stems or clones from the same genet). The commenter proposes that the population size may be about half of the number we report because ramets may have been counted instead of genets. The commenter acknowledges that others do not agree that the plants are clonal.

Our response: During transplanting of Graham's beardtongue in 2012, plants were excavated and inspected but clonal reproduction was not observed (Brunson 2012a, entire; Reisor 2014a, entire). Graham's beardtongue may produce multiple rosettes from

one branching caudex (stem), but these might represent only 5-10 percent of the population (Brunson 2012a, entire), and these are not thought to contribute greatly to inflated population counts (Reisor 2014a, entire). Based on this information, we conclude that surveys represent accurate counts and that our population estimates are correct based on the best available information.

(79) Comment: One commenter stated that several citations in the 2014 CA should be corrected including Kramer *et. al* 2011, which is not relevant to pollination of penstemon species.

Our response: We have reviewed the 2014 CA, and made the suggested citation changes except for Kramer *et. al* 2011, which is used in the context of genetic relationships between penstemon species.

(80) Comment: One commenter recommended that we include pollinator scarcity as a threat.

Our response: We included pollinator scarcity as an impact under energy development and exploration in the 2014 CA (see Table 4. Threats to Graham's and White River Beardtongues and Associated Conservation Actions). This threat is being reduced by establishing conservation areas and limiting disturbance, which will allow pollinators adequate habitat and secondary floral resources.

(81) Comment: One commenter was concerned that we used a lower population number of 11,423 to characterize the population of White River beardtongue compared to the 25,000 as estimated by other sources.

Our Response: Our population number of 11,423 plants of White River beardtongue in the proposed rule was determined from the best scientific and commercial data available, based on more recent data than the higher population estimate the commenter suggest using. Since the publication of the proposed rule, we received additional survey information that increased our estimate of the population of White River beardtongue to 12,215 plants.

(82) Comment: A couple of commenters stated that we made contradictory conclusions regarding the certainty of oil shale development. The commenters gave examples, such as the Draft Economic Screening Memorandum, which acknowledges the uncertainty of the viability of oil shale development, whereas the proposed rule states that oil shale development is “highly likely.” In addition, the proposed rule concluded that oil shale development will occur sooner, and to a greater extent than concluded by the Draft Economic Screening Memorandum. The commenters concluded that we should revise the estimates of the magnitude of threats from energy development.

Our Response: Based on our analysis as discussed under **Summary of Factors Affecting the Species**, Energy Exploration and Development, we found that without protections, oil shale development is a threat to the species in the foreseeable future. Our

Draft Economic Screening Memorandum assessed only the economic impacts from designating critical habitat, and thus some of the conclusions of the memorandum differ from our assessment of threats to the species, as they are evaluating different questions.

(83) Comment: One commenter stated that the 2014 CA restricts and prohibits the ability of leasees to develop their mineral rights adequately. The commenter stated that the BLM cannot restrict additional surface disturbance on existing leases once the disturbance caps as defined in the 2014 CA are reached.

Our Response: Surface disturbance caps within conservation areas are sufficient to allow reasonable access to existing leases with current technology. BLM has committed to limiting surface disturbance within conservation areas.

(84) Comment: One commenter stated that the 91.4 m (300 ft) buffer around plant occurrences in the draft conservation agreement is too large, and there is no demonstrated need for such a large buffer. Instead, the commenter recommends a 30.5 m (100 ft) buffer with dust suppressant measures.

Our Response: Our review of available literature shows that impacts to plants from dust can extend out to 1,000 m (3,281 ft), and additional impacts from surface-disturbing activities can extend to 2,000 m (6562 ft) (Service 2014a, entire). The greatest impacts occur closest to the disturbance, and the 91.4 m (300 ft) buffer balances energy development with protection of listed plant species.

(85) Comment: One commenter stated that the 2014 CA should revise the timeframe when surveys should be conducted in relation to surface-disturbing activities, so that surveys must be conducted at least one year prior to surface disturbing activities, and that we should extend the length of time that surveys are valid (currently one year) so that surveys are not outdated prior to the commencement of surface-disturbing activities.

Our Response: The Service has developed guidelines for surveys of listed plant species in Utah (Service 2011, entire). Our guidelines state that surveys for listed plant species are good for one year because seeds may disperse and colonize new areas, or remain in the seed bank until conditions are favorable. We believe this conclusion and our guidelines are still valid.

(86) Comment: One commenter asked us to clarify when plant salvage and mandatory avoidance measures would apply under the implementation of the 2014 CA.

Our Response: Under the terms of the 2014 CA, plant salvage will occur voluntarily when plants are directly impacted by surface-disturbing activities outside of designated conservation areas on non-federal lands. We did not consider plant salvage in our analysis of the effectiveness of the 2014 CA to conserve the species, because these measures are voluntary and cannot be relied upon to protect the species from threats. However, mandatory avoidance measures were evaluated in our PECE process. Mandatory avoidance measures occur within all conservation areas, and within and

outside of conservation areas on BLM lands; in these areas surface-disturbing activities will avoid plants by a 91.4 m (300 ft) buffer. Surface-disturbing activities may only occur within 91.4 m (300 ft) of plants if they benefit or reduce impacts to the species or habitat, and, on non-federal lands, may only occur if they are approved by the conservation team, or on federal land, after BLM has conferenced with the Service.

(87) Comment: One commenter stated that the BLM cannot incorporate the provisions of the 2014 CA into permits and its RMP without analyzing the impacts through NEPA analysis.

Our Response: The terms of the 2014 CA will be applied to proposed projects on BLM lands during the NEPA process on those projects, and will thus not require an RMP amendment in order to implement them. In the 2014 CA, the BLM agreed to incorporate the terms of this agreement into its planning process during the next RMP revision, but in the interim the agency will proceed through the NEPA planning and public review process on a project-specific basis.

(88) Comment: One commenter stated that mitigation for impacts to both beardtongue species should be clearly spelled out in the 2014 CA when avoidance by 91.4 m (300 ft) is not possible. In addition, mitigation should be considered for impacts over the 5 percent and 2.5 percent disturbance caps. These mitigation measures should be developed with the involvement of all stakeholders.

Our Response: Surface disturbing activities may only occur within 91.4 m (300 ft) of plants if they benefit or reduce impacts to the species or habitat and, on non-federal lands, if they are approved by the conservation team, or on federal lands, if BLM has conferred with the Service. Mitigation for unavoidable impacts will be determined on a project-specific basis. Successful ecological restoration may be used in conservation areas on private lands to offset effects over the disturbance limits set by the 2014 CA.

(89) Comment: One commenter stated that the May 5, 2014 press release, notice of availability (79 FR 25806), and supporting documents were confusing to the public because they did not clearly present the options to protect the beardtongue species including either signing and enacting the 2014 CA, or listing the species as threatened and designating critical habitat under the Act. In addition we did not provide a PECE analysis.

Our Response: Our document stated that: “We intend to consider this conservation agreement once it has been signed in our final decisions on whether to list Graham’s beardtongue and White River beardtongue under the Act, and invite the public to comment on the agreement and its impact on the conservation of these species, and whether the draft agreement sufficiently ameliorates the threats to Graham’s beardtongue and White River beardtongue. We intend to evaluate this agreement under our Policy for Evaluation of Conservation Efforts When Making Listing Decisions (PECE policy) (68 FR 15100, March 28, 2003; 79 FR 25806, p. 25811).” Our detailed PECE analysis is now available for review at <http://www.regulations.gov> and

<http://www.fws.gov/mountain-prairie/species/plants/2utahbeardtongues/>. See the Ongoing and Future Conservation Efforts and PECE Analysis sections below for more information.

(90) Comment: One commenter stated that Graham's and White River beardtongues are different species with different geographical ranges and population demography and should not be lumped together for listing and analysis.

Our Responses: We agree that Graham's and White River beardtongues are different species with different geographical ranges and population demography, and they were considered separately for our listing determination. However, they appear in the same listing document because their ranges overlap and threats to both species are similar.

(91) Comment: One commenter encouraged us to list the species without designating critical habitat if we decide to enter into the 2014 CA.

Our Response: We have concluded that the 2014 CA adequately reduces the threats to the species, and we no longer consider either species to be warranted for listing under the Act.

(92) Comment: One commenter questioned the participation of State of Utah employees, the Director of SITLA, and Uintah County officials in the 2014 CA because

he doubted their commitment to the species' conservation based on their track record with conservation of rare plant species in the past.

1. *Our Response:* Through our PECE process we evaluated the conservation measures of the 2014 CA, past conservation actions, and the commitments made by state and local organizations. We determined that the conservation effort, the parties to the agreement that will implement the effort and the staffing, the funding level, the funding source and other resources necessary to implement the effort are identified. Through our PECE analysis we concluded that the conservation measures in the 2014 CA have a high certainty of being implemented and effective.

(93) Comment: One commenter stated that increased population estimates for the species may be the result of increased surveys and not indicative of an increasing population trend. The commenter noted that the population estimate of approximately 40,000 Graham's beardtongue plants is more likely to be 20,000 plants because the survey data incorporates surveys over a 35-year period and some of the sites may now be extirpated or reduced in size, or some of the plant may have been misidentified.

Our Response: We used the best available information to determine the known population size of each species (see **Background-Graham's beardtongue**, *Species Information*, Distribution and Trends). We acknowledge that the best available information may contain counts of plants that no longer occur, but it also may include

underestimates of some populations where plant occupancy was documented but counts were not provided, in which case we assumed a count of only 1 plant. All survey information was provided by trained botanists, so it is not likely that plants were misidentified. We agree that as we increase our survey effort the number of plants we find also increases, and that this is not indicative of an increasing population trend.

(94) Comment: One commenter stated that increasing temperatures, less rainfall, and increased herbivory, in addition to increased disturbance from roads, dust, and livestock grazing, may push Graham's beardtongue to extinction over the next 25 years. The commenter concluded that the 2014 CA term of 15 years is not sufficient in light of the Enefit mining plan which extends for a period of 30 years.

Our Response: The term of the 2014 CA is 15 years, but can be renewed by any or all parties at that time to continue to conserve both beardtongue species. We will re-evaluate the need for protections under the Act if during or after the period of the 2014 CA either species is warranted for listing as threatened or endangered. See further discussion in the **Determination** section of this document regarding the foreseeable future of the threats.

(95) Comment: One commenter stated that the 2014 CA could be considered sufficient to reduce threats to the species if the termination clause was removed and more permanent protections were committed to, including designating ACECs on BLM lands and conservation easements on private lands.

Our Response: We concluded that the conservation measures in the 2014 CA have a high certainty of being implemented and effective. Our detailed PECE analysis is available for review at <http://www.regulations.gov> and <http://www.fws.gov/mountain-prairie/species/plants/2utahbeardtongues/>. See the Ongoing and Future Conservation Efforts and PECE Analysis sections below for more information.

(96) Comment: A few commenters concluded that we overestimated the threats to the beardtongue species, specifically fugitive dust, grazing, OHV use, unauthorized collection, invasive weeds, small population size, and climate change, and thus the commenters did not support our finding that the beardtongues are in danger of extinction. The commenters furthered concluded that if we find that these factors are not threats to the species individually, then they do not constitute a cumulative threat to the species.

Our Response: We have determined that the 2014 CA adequately addresses threats to the species that were identified in our proposed rule, and the species is no longer considered warranted for listing under the Act.

(97) Comment: One commenter concluded that we overstated the threats to the species from future energy development. The commenter stated that energy development is not a threat to the species because populations are stable, predictions of future energy development are not supported, there is no commercial oil shale development in the Uinta Basin, the two beardtongues species are found on steep slopes where energy development

is more costly, the density of well pads and size of disturbance from drilling projects are decreasing, and the BLM already provides protection for the species as a candidate species.

Our Response: Our analysis of the threats to the species shows that although populations are currently stable, without the 2014 CA protections they are subject to landscape-level threats from future energy development. See our analysis and discussion of the threats to both beardtongue species from energy development under **Summary of Factors Affecting the Species**, Energy Exploration and Development.

(98) Comment: One commenter supports the conclusions of the proposed rules that energy development including oil shale development and traditional oil and gas drilling poses a threat to the species.

Our Response: We agree that energy development is a threat to the species; however, we have determined that the 2014 CA adequately addresses these threats by establishing conservation areas throughout the range of the species.

(99) Comment: One commenter stated that the 2014 CA does not address threats where habitat is leased for both oil and gas development and oil shale development and does not provide information on existing surface disturbance.

Our Response: We have concluded that the 2014 CA addresses the threats of oil shale and traditional oil and gas development by establishing conservation areas, restricting surface disturbance within these conservation areas, and keeping surface disturbing activities at least 91.4 m (300 ft) from Graham's and White River beartongues. Calculations of existing surface disturbance are ongoing and will be incorporated into the 2014 CA once they are available.

(100) Comment: One commenter stated that we should provide information regarding the seismic project discussed in the proposed rule.

Our Response: The proposed seismic project is still being evaluated under the NEPA process by the BLM Vernal Field Office. This seismic project encompasses 9 sections in Utah and 5 sections in Colorado. The purpose of the project is to assess the potential for oil and gas development by acquiring information on potential resources present from four parallel seismic lines totaling 7.3 miles. Additional information about the project can be found on the Vernal BLM projects webpage once it is ready for public review at http://www.blm.gov/ut/st/en/fo/vernal/planning/nepa_.html. As discussed below (see **Summary of Factors Affecting the Species**, Energy Exploration and Development, *Traditional Oil and Gas Drilling*), we view this project as an indication that traditional oil and gas development will very likely increase in the habitat of both of these species. However, the 2014 CA provides protections to avoid, minimize, and mitigate the impacts of oil and gas development, effectively reducing this threat to the species.

(101) Comment: One commenter stated that climate change alone poses a threat to the species. The Colorado Natural Heritage Program's Colorado Wildlife Action Plan assessed the vulnerability of rare plants to climate change and found that both Graham's and White River beardtongues were extremely vulnerable (June 2011). The Utah Heritage Program model for Graham's beardtongue found that the timing and amount of moisture was important in the distribution of the species. The commenter concluded that we must designate critical habitat to conserve the species instead of relying on the conservation areas delineated in the 2014 CA.

Our Response: We agree that without protections climate change poses a threat to the species when considered cumulatively with other threats. We have concluded that the 2014 CA adequately reduces the threat of energy development by establishing conservation areas that protect 64 percent of the population of Graham's beardtongue and 76 percent of White River beardtongue and that span the range of environmental variation within the species' range. In addition, the 2014 CA addresses climate change with the installation of a weather station and by studying the response of the two species to weather patterns. Once we can better predict the two species' response to climate changes, we can then take measures to address the species' future needs from the threat of climate change. In addition, the 2014 CA provides for the resiliency, redundancy and representation of both species by protecting adequate habitat and an adequate percent of the population in multiple sites that include various slope aspects and important natural community associates and attributes, such as pollinators, pollinator nesting sites, and secondary floral resources.

(102) Comment: One commenter asked us to reconsider the effects of livestock grazing on both species, because there is documentation of the effects of herbivory to reproduction and effects from other herbivores that contribute to lost reproduction, trampling effects on pollinators, declining habitat conditions with several allotments within the range of both species needing improvement, and low and sporadic reproduction making it vulnerable to stochastic events and habitat changes.

Our Response: We agree that without conservation protections, livestock grazing poses a threat to both species in conjunction with other threats including energy development. We have addressed these threats in the 2014 CA, which states that BLM will monitor impacts from grazing and will adjust grazing regimes accordingly to reduce associated impacts.

(103) Comment: A commenter stated that small population size poses a threat to the species because small populations that are fragmented are more vulnerable to habitat changes and disturbances. The commenter cited a demography study (McCaffery 2013a, entire) that shows that neither species is stable, and both species are threatened by small population sizes and habitat fragmentation.

Our Response: We agree that, without protections, small population size is a threat to the two beardtongue species when considered cumulatively with other threats. However, we reviewed the same study cited by the commenter and came to a different

conclusion about the stability of these populations. Available studies indicate the monitored sites for Graham's beardtongue are stable (McCaffery 2013a, p. 15; BLM 2011, p. 6-7). For White River beardtongue, one site was found to be stable and a second site was close to stable with a very low chance of extinction over the next 50 years (McCaffery 2013a, p. 15). The 2014 CA protects 64 percent of Graham's beardtongue, and 8 of the occurrences protected in conservation areas have a 7 percent or lesser chance of extinction, and 4 occurrences have less than a 2 percent chance of extinction over the next 50 years (McCaffery 2013a, entire; Service 2014d, entire). The 2014 CA protects 76 percent of White River beardtongue, and 4 of the occurrences protected in conservation areas have a less than 1 percent chance of extinction over the next 50 years (McCaffery 2013a, entire; Service 2014d, entire).

(104) Comment: One commenter stated that Graham's beardtongue has been surveyed sufficiently and both Graham's and White River beardtongues are some of the most surveyed species in Utah. Baseline surveys from 1978 and 1979 show that Graham's beardtongue have declined since that time period.

Our Response: The best available information based on continuous and consistent monitoring of Graham's and White River beardtongue from 2004 to 2012 does not indicate that the populations of either species are declining (BLM 2011, pp. 6-7; McCaffery 2013a, entire).

(105) Comment: One commenter stated that at 12,215 plants, the population of White River beardtongue is low enough to be considered for listing as endangered. The commenter noted that about one-third of the population occurs on BLM lands. The commenter noted that the population of this species is precarious. Another commenter indicated that populations of both beardtongue species in Colorado are small, and thus warranted for protection under the Act.

Our Response: As discussed below under **Summary of Factors Affecting the Species**, Small Population size, some species exhibit rarity but are not warranted for listing under the Act. A species that has always been rare, yet continues to survive, could be well equipped to continue to exist into the future. Many naturally rare species have persisted for long periods within small geographic areas, and many naturally rare species exhibit traits that allow them to persist despite their small population sizes. Consequently, the fact that a species is rare does not necessarily indicate that it may be in danger of extinction in the foreseeable future. Rarity is a characteristic that may increase a species' vulnerability to factors such as demographic stochasticity, environmental stochasticity, genetic stochasticity, and natural catastrophes. However, whether a given rare species is affected by any of these factors, and the magnitude of the effect of these factors on the species' ability to persist into the foreseeable future, is species- and context-specific. Consequently, in general the Service does not consider rarity alone to be a threat, unless there is information identifying threats to the species and linking those threats to the rarity of the species.

In this case, the current population size of White River beardtongue in and of itself does not mean that it is endangered or threatened. The best information that we have about the population indicates that White River beardtongue is stable (McCaffery 2013a, entire; BLM 2011, p. 6-7), and we have concluded that the 2014 CA sufficiently protects the species from threats. The large occurrence of White River beardtongue that occurs on BLM lands is protected in a conservation area.

(106) Comment: One commenter stated that we must consider that the BLM conservation measures, such as the 91.4 m (300 ft) buffer to protect the species, are not enforceable, have not been adhered to in at least one Section 7 consultation, and the BLM travel management plan will not be sufficient to protect the species from OHV impacts.

Our Response: The Secretary of the Interior (Secretary) has the authority to manage oil and gas operations on Federal lands. The Secretary has delegated this authority to the Bureau of Land Management (BLM), which has issued onshore oil and gas operating regulations codified at 43 CFR part 3160. The operating regulations at 43 CFR 3164.1 authorize the BLM's Director to issue Onshore Oil and Gas Orders when necessary to implement and supplement the operating regulations. In addition 43 CFR 3162.5-1 that deals with environmental obligations provides that, "the operator shall comply with the pertinent orders of the authorized officer and other standards and procedures as set forth in the applicable laws, regulations, lease terms and conditions, and the approved drilling plan or subsequent operations plan." BLM also has the authority to determine whether planned activities adhere to their policies and if they will adversely

impact sensitive species. Therefore, BLM conservation measures are enforceable. We have determined in our PECE analysis that the conservation measures are likely to be implemented and effective. See the **Ongoing and Future Conservation Efforts and PECE Analysis** sections below for more information. Off-highway Vehicle use was not considered a threat to the species, but the 2014 CA includes provisions to ensure that it does not become a threat in the future (see **Summary of Factors Affecting the Species, Off-highway Vehicle Use**)

(107) Comment: One commenter stated that our proposed rules did not adequately address representation, redundancy, or resiliency as was defined and considered in the listing of the Preble's Meadow Jumping Mouse (73 FR 39790).

Our Response: We adequately address resiliency, redundancy and representation of the species in this document and in the 2014 CA conservation measures. We address resiliency of the species by conserving an adequate amount of the species habitat and populations through the establishment of conservation areas and limiting surface disturbance within these areas. We address the redundancy of the species by ensuring there are enough occurrences of the species throughout its range by establishing conservation areas in each conservation unit throughout the range of the species. We provide for the representation of the species by conserving its community associates through establishing conservation areas that encompass these associates. Our analyses of representation, resiliency and redundancy are specific to the species we are evaluating.

Therefore, the details of our analysis for Graham's and White River beardtongues differ from the Preble's Meadow Jumping Mouse analysis.

(108) Comment: One commenter stated that our proposed rules did not provide sufficient resiliency for either species as they should protect suitable unoccupied habitat on other slopes to allow for species' movement as a result of climate change.

Our Response: We do not have predictive information detailing how Graham's and White River will respond to climate change in terms of what areas they may need as refugia. However, both the proposed critical habitat and the 2014 CA conservation areas include unoccupied habitat on slopes of various aspects that should allow the species to adapt to chosen microhabitats as the climate changes. As we are able to better understand both species responses to climate change, we can work with the conservation team to modify conservation areas to accommodate the species needs.

(109) Comment: One commenter concluded that any analysis under our PECE policy should find that the 2014 CA is not adequate because it is not certain to be implemented and not certain to be effective.

Our response: We concluded that the conservation measures in the 2014 CA have a high certainty of being implemented and effective. Our detailed PECE analysis is available for review at <http://www.regulations.gov> and <http://www.fws.gov/mountain->

[prairie/species/plants/2utahbeardtongues/](#). See the Ongoing and Future Conservation Efforts and PECE Analysis sections below for more information.

(110) Comment: One commenter stated that conservation areas that were established in 2014 CA but not evaluated in our proposed critical habitat rule should not be considered until they can be determined to be suitable for the species. Another commenter requested clarification on what information was used to establish the conservation area boundaries.

Our Response: The conservation area boundaries were drawn based on plant occurrences, densities, and population sizes over the range for each species. We used a kernel density analysis in ArcGIS (Brunson 2013, entire) of known occurrences to identify areas of high density occurrences which have a lower probability of extinction over the next 50 years (McCaffery 2013a; entire). Conservation areas include the beardtongue species, insect and community associates, corridors between occurrences, and additional buffers and habitat for pollinators.

Summary of Changes from the Proposed Rule

Based upon our review of the public comments, comments from other Federal and State agencies, peer review comments, issues raised at the public hearing, and new relevant information that has become available since the publication of the proposal, we have reevaluated our proposed listing rule and made changes as appropriate. Other than

minor clarifications and incorporation of additional information on the species' biology and populations, this determination differs from the proposal in the following ways:

- (1) Based on our analyses of the potential threats to the two species and the protections provided by the 2014 CA, we have determined that neither Graham's nor White River beardtongue meets the definition of a threatened or endangered species. This document withdraws our proposed rule as published on August 6, 2013 (78 FR 47590). Subsequently, this document also withdraws our proposed rule to designate critical habitat for these species (78 FR 47832, August 6, 2013).
- (2) We have added a discussion of **Ongoing and Future Conservation Efforts**, below. The conservation measures in the 2014 CA are included in this section.

Ongoing and Future Conservation Efforts

Below we review conservation efforts for Graham's and White River beardtongues, including those in the 2014 CA. We describe the significant conservation efforts that are already occurring and those that are expected to occur in the future. We have also completed an analysis of the newly initiated and future conservation efforts pursuant to our Policy for Evaluation of Conservation Efforts When Making Listing Decisions (PECE) (68 FR 15100, March 28, 2003).

After our withdrawal of the listing for Graham's beardtongue in 2006 (71 FR 3158, January 19, 2006; 71 FR 76024, December 19, 2006) several stakeholders initiated conservation measures for the species as outlined in a 2007 Conservation Agreement and Strategy (2007 CAS) for Graham's beardtongue; these conservation measures included plant surveys, 91.4-m (300-ft) avoidance buffers on BLM lands, and a demography study that has been ongoing since 2004. In our 2013 proposed rule, we determined that these conservation measures were no longer sufficient to address the threats to the Graham's beardtongue and did not specifically address threats to White River beardtongue. Since 2007, Utah DNR, BLM, and Uintah County have implemented many of the conservation measures as described in the 2007 Conservation Agreement.

Despite the positive accomplishments of the 2007 Conservation Agreement, our 2013 proposed rule identified several threats that would negatively act on Graham's and White River beardtongues and their habitat in the future. Threats identified in the 2013 proposed rule included: (1) energy exploration and development; and (2) cumulative impacts of increased energy development, livestock grazing, invasive weeds, small population sizes, and climate change. We also determined that existing regulatory mechanisms were not adequately addressing the future threats from energy development (78 FR 47590, August 6, 2013).

Based on information provided in our proposed rule, land managers, Uintah and Rio Blanco Counties, and State agencies established a 2014 CA and conservation actions to address the identified threats. The 2014 CA includes the most recent Graham's and

White River beardtongue survey information and establishes conservation areas that will be managed with limited surface disturbance and avoidance buffers for individual plants (see Table 3; Figure 3; 2014 CA, entire), as further described below. The 2014 CA also includes measures to address the cumulative impacts from energy development, livestock grazing, invasive weeds, small population sizes, and climate change, in addition to the inadequacy of regulatory mechanisms identified in our proposed rule (78 FR 47590, August 6, 2013). The term of the conservation agreement is for 15 years, but can be renewed depending on the success of the conservation agreement and if signatories are willing. After the 15-year period, we hope to better understand the intensity and timeframe of oil shale development, the species distribution within its range, as well as responses to livestock grazing so that any future conservation agreement can address those factors appropriately.

The conservation areas designated in the 2014 CA are designed to ensure redundancy, resiliency, and representation of the species across their ranges. A species can be conserved (and is thus viable) if it has adequate representation, resiliency, and redundancy (Shaffer and Stein 2000). Representation, or preserving some of everything, means conserving not just a species but its associated plant communities, pollinators, and pollinator habitats. Resiliency and redundancy ensure there is enough of a species so that it can survive into the future. Resiliency means ensuring that the habitat is adequate for a species and its representative components, and populations are of sufficient size to withstand stochastic events. Redundancy ensures an adequate number of sites. This

methodology has been widely accepted as an appropriate conservation methodology (Tear *et al.* 2005, p. 841).

The boundaries of the conservation areas in the 2014 CA were selected to encompass large populations to ensure species' viability and smaller populations to provide connectivity and represent the range of the species. The designated conservation areas include approximately 17,957 ha (44,373 ac) (Figure 3; Table 3). Graham's beardtongue is divided into five units, and White River beardtongue is divided into three units, similar to the units that were identified in the proposed rule to designate critical habitat (78 FR 47832). We are using units because the boundaries of element occurrences or populations continue to change rapidly as previously unsurveyed suitable habitat is surveyed and more plants are found causing population boundaries to expand and/or merge. Total number of plants for each species within each unit of the conservation areas is shown in Table 3.

Table 3. Numbers of Graham's and White River beardtongue plants by unit in conservation areas.

Unit	Total number of Graham's beardtongue plants	Number of plants (and %) in conservation area	Total number of White River beardtongue plants	Number of plants (and %) in conservation area
1. Sand Wash	2,488	1,842 (74%)	N/A	N/A
2. Seep Ridge	8,760	6,693 (76%)	N/A	N/A
3. Evacuation Creek	21,665	12,238 (56%)	2,070	1,620 (78%)
4. White River	7,383	4,966 (67%)	9,705	7,171 (74%)
5. Raven Ridge	37	37 (100%)	440	439 (99 %)
Total	40,333	25,776 (64%)	12,215	9,230 (76%)

Within designated conservation areas for Graham's beardtongue, surface disturbance will be limited to an additional 5 percent new surface disturbance, and within designated conservation areas for White River beardtongue surface, disturbance will be limited to an additional 2.5 percent of new surface disturbance. Where surface disturbance occurs in designated conservation areas, the disturbance will avoid plants by at least 91.4 m (300 ft). On BLM-managed lands, Graham's and White River beardtongue plants will also receive the protection of 91.4-m (300-ft) avoidance buffers at all locations where the plants are found (i.e., including areas outside of designated conservation areas). Where disturbance must occur within 91.4 m (300 ft) of plants, mitigation measures must be included in project actions (Table 4; Conservation Action 6). Mitigation will be designed to offset impacts so that the entire effect of mitigation is as beneficial or better than a 91.4 m (300-ft) avoidance.

Table 4. Conservation measures in the 2014 Conservation Agreement for Graham's and White River beardtongue (2014, CA entire).

Threat and Associated Impacts	Conservation Action
Energy Exploration and Development	
Habitat loss/fragmentation	<p>1. Conservation areas totaling 17,957 ha (44,373.4 ac) will be established by the Agreement . These conservation areas include 2,382 ha (5,886.9 ac) on private and state lands. Within these conservation areas, development and surface disturbance will be minimized and consolidated to reduce habitat fragmentation, and new surface disturbance minimized in conservation areas by the following actions:</p> <ul style="list-style-type: none"> • Limiting new surface disturbance to 5 percent per unit on federal lands and by landowner on non-federal lands for Graham's beardtongue, and 2.5 percent per unit on federal lands and by landowner on non-federal lands for White River beardtongue. Units are shown in Figure 3. • Avoiding plants by 91.4 m (300 ft). Surface disturbing activities may only occur within 91.4 m (300 ft) of plants only if it benefits or reduces impacts to the species or habitat. On non-federal lands surface disturbance within 300 ft of either species will need to be approved by the conservation team. On federal lands if surface disturbance is within 300 ft of either species BLM will first conference with USFWS. • Calculating new surface disturbance from those activities that include a permanent structure, activities that require a permit, or new roads or improvements to existing roads in order to track new surface disturbance and ensure disturbance does not exceed thresholds in this agreement <p>3. Successful ecological restoration may be used in conservation areas on private lands to offset disturbance limits.</p>
Direct mortality from surface disturbance	<p>4. On federal lands, ground-disturbing activities including oil and gas exploration and development will conform with BLM special-status plants species policies, and these species will be treated as a BLM sensitive species. Within designated conservation areas, the BLM will do the following:</p> <ul style="list-style-type: none"> • Limit new surface disturbance to 5 percent per unit for Graham's beardtongue and 2.5 percent per unit for White River beardtongue • Survey for plants within 91.4 m (300 ft) of proposed disturbance • Avoid disturbance within 91.4 m (300 ft) of plants. Surface disturbing activities may occur within 91.4 (300 ft) of plants only if it benefits or reduces impacts to the species or habitat. When this occurs BLM will first conference with USFWS. . • Minimize and consolidate development to reduce habitat fragmentation <p>Outside conservation areas on federal lands, ground-disturbing activities will be sited to avoid Graham's and White River beardtongue plants by 91.4 m (300 ft).</p> <p>5. On non-federal lands in a conservation area or interim conservation area, new ground-disturbing activities including oil and gas exploration and development proponents will follow these procedures:</p> <ul style="list-style-type: none"> • Pre-site surveys will be conducted to determine presence and locations of plants (see Survey and Monitoring requirements in table notes) • Exploration and development will be limited to 5 percent new surface disturbance for Graham's beardtongue and 2.5 percent new surface disturbance for White River beardtongue (high-density core population areas on non-federal lands are shown in Maps 20–26 of Appendix A) • Avoid plants by 91.4 m (300 ft). Surface disturbing activities may occur within 91.4 m (300 ft) of plants only if it benefits or reduces impacts to the species or habitat and is approved by the conservation team. <p>6. On federal and non-federal lands where new surface disturbance will occur in a conservation area within 91.4 m (300 ft) of plants, the project proponent will mitigate for impacts. Within 1 year of signing the Agreement, the conservation team will develop a standardized procedure to address how mitigation is to occur depending on level of impacts. Examples of mitigation could include payments into a mitigation fund for minor impacts, protection of other occupied areas at a ratio</p>

	<p>specified by the conservation team, or site-specific mitigation appropriate to each project as determined by the conservation team.</p> <p>7. On non-federal land outside conservation areas and interim conservation areas with approved exploration or plan of operations permits, conservation actions are encouraged but voluntary. Good faith, voluntary actions could include avoidance, minimizing impacts to individual plants, seed collection, plant salvage and transplant, and experimental reclamation and restoration treatments.</p>
Indirect disturbance from surface disturbance, including increased dust; introduction and spread of invasive, non-native plant species; and habitat fragmentation	See conservation actions 1–3 described in “Habitat loss/fragmentation” above.
Community and habitat loss and disturbance from surface disturbance, including soil and vegetation removal	See conservation actions 1–3.
Restricted pollinator movement, mortality and disturbance from roads and associated traffic, and energy emissions	See conservation actions 1–3.
Increased sedimentation and erosion	See conservation actions 1–3.
Pollinator scarcity	See conservation actions 1-6
Inadequacy of Existing Regulatory Mechanisms	
Lack of range-wide protection	<p>See conservation actions 1–7.</p> <p>8. The BLM will ensure that ongoing and future BLM actions support or do not preclude the species' conservation. All projects in designated conservation areas and their potential to impact the species will be reported in the conservation team's annual report.</p> <p>9. The BLM will retain Graham's and White River beardtongues on the BLM special-status species list as a sensitive species with new ground-disturbing activities avoiding plants by 91.4 m (300 ft) (inside and outside conservation areas), and ensure that the effects of proposed projects are analyzed for the species.</p> <p>10. The BLM will consider land exchanges with state and private landowners to expand or otherwise enhance the value of conservation areas on federal lands and facilitate the long-term persistence and recovery of the species, while protecting the long-term economic sustainability of the area.</p> <p>11. The BLM will incorporate the provisions of this Agreement or the latest amendments to this Agreement into its Resource Management Plan planning process, permitting requirements, agency planning documents and budgets. Within 3 months of the signature date of the Agreement, the BLM will incorporate the provisions of this plan into permits and budgets. During the next planning cycle, the BLM will incorporate the provisions of this Agreement into their RMP planning process. The conservation team will provide an annual report on the implementation of this Agreement. The report will also include monitoring results and adaptive management recommendations.</p> <p>12. If federal land within a conservation area is transferred to the State of Utah, the state agrees to maintain the designated conservation areas and protections for the two species in the transferred parcels, or place lands of comparable or greater value to the conservation of the species in conservation areas within the same species unit as approved by the conservation team.</p> <p>13. Uintah County will enact an ordinance with associated enforcement protocols and penalties that adopts the conservation measures in this Agreement, including limiting new surface disturbance in conservation areas to 5 percent for Graham's and 2.5 percent for White River beardtongue and avoiding impacts to plants by 91.4 m (300 ft) in designated conservation areas on non-federal and non-state lands, within 3 months after the signing of this Agreement.</p> <p>14. SITLA will enact a regulation, order, or lease stipulation, as applicable, within 3 months of signing the Agreement that will limit new surface disturbance to 5 percent for Graham's and 2.5 percent for White River beardtongue, and avoid impacts to plants by 91.4 m (300 ft) in designated conservation areas or interim</p>

	<p>conservation areas on SITLA lands.</p> <p>15. The conservation team will develop and implement a scientifically valid monitoring plan (approved by consensus) to determine trends in plant populations across the range of the species. The plan should include continued monitoring at the current sites established by Red Butte Gardens, and establish additional monitoring sites to capture range-wide variation in habitat, climate, and population processes.</p> <p>16. The conservation team will coordinate annual seed collections in all areas where the species are present (with landowner approval), in accordance with USFWS and Center for Plant Conservation (CPC) guidelines, for placement in storage at Red Butte Garden and the National Center for Genetic Resources Preservation. A seed collection plan will be developed and implemented with approval from the USFWS.</p>
Loss of plants/habitat under federal landownership/management	See conservation actions 8–11 and 15–16.
Loss of plants/habitat under non-federal ownership/management	<p>In conservation areas on non-federal lands, conservation actions 5–7 and 12–16 will minimize and mitigate any loss of individual plants and habitat.</p> <p>17. On SITLA interim areas (Class A: 682 ha [1,686.6 ac], Class B: 724 ha [1,789.8 ac]) and private interim areas (140 ha [345.5 ac]) prior to approval of any exploration or plan of operations, these areas will also have a limit of 5 percent new disturbance for Graham's and 2.5 percent for White River beardtongue from baseline as set forth in conservation action 14. In the event there are surface-mine plan filings that would necessitate the destruction or removal of habitat, SITLA or the landowner, upon election to convert all or part of an interim conservation area to a non-conservation area, will require pre-disturbance surveys, and to the extent feasible in its reasonable judgment, after consultation with the conservation team, salvage a minimum of 50 plants or 25 percent of the total population size, whichever is greater, and collect seed from 50 plants or 25 percent of the total population size for long-term conservation at Red Butte Garden of identifiable plants from the disturbance area. To the extent feasible, pre-disturbance surveys should be initiated a minimum of 1 year prior to surface-disturbing activities. To the extent feasible, plants should be salvaged in late fall to maximize survival and likelihood of transplant success. Transplant and monitoring of salvaged plants will be overseen by the conservation team.</p> <p>18. On private lands, conservation actions on occupied habitats outside of designated conservation areas will be entirely voluntary. Plant and seed salvage and other good faith efforts to protect plants and restore habitat will be considered, but will not be mandatory. The conservation team is expected to work with private entities to promote and provide support for conservation actions on private lands, and will consider creation of a conservation credit system for plant salvage, habitat banking, support of conservation initiatives, and other voluntary activities that promote the persistence and recovery of the species. The conservation team should also promote voluntary restoration and habitat banking or exchanges by private landowners, where landowners would restore occupied habitat or dispersal corridors in anticipation of the need for future revisions of conservation areas on their property or by other private landowners. Allocation or allowances for landowner credits for conservation banks or exchanges would be subject to the authority of the conservation team. The conservation team would also determine how restored populations and habitats would be utilized.</p>
Habitat loss and fragmentation	See conservation actions 1–3.
Livestock Grazing on BLM-Managed Lands	
Herbivory of all or part of aboveground portion of vegetative portion of plant	<p>19. On federal lands where the species co-occur with livestock grazing during the growing season (April through September), the BLM will develop and implement a mitigation and monitoring plan for each allotment within 1 year of signing this Agreement. If monitoring identifies that livestock grazing is negatively affecting the species, the BLM will immediately adjust livestock management in the allotment to ameliorate those impacts. Short-term adjustments may include construction of temporary drift fences to keep livestock away from occupied habitat, and long-term adjustments may include permanent fencing or modifying the grazing schedule. In any adjustment made to allotments, the authorized officer will include consultation, cooperation and coordination with affected permittees, as stipulated in 43 CFR 4130.3-3. The conservation team will be consulted as necessary. The conservation team will be apprised of changes and modifications to management of allotments through annual reporting to the conservation team.</p>

Herbivory of all or part of the inflorescence	See conservation action 19.
Trampling of plant and habitat	See conservation action 19.
Change in community composition	See conservation action 19.
Invasive species invasion, spread, and competition	See conservation actions 19 and 20–24.
Alteration of soil characteristics	See conservation action 19.
Road Construction and Maintenance	
Direct mortality from surface disturbance	See conservation actions 1–3.
Invasive species invasion, spread, and competition	See conservation actions 20–24.
Increased dust emissions	See conservation actions 1–3.
Restricted pollinator movement from roads	See conservation actions 1–3.
Habitat loss/fragmentation	See conservation actions 1–3.
Invasive Weeds	
Invasion and establishment of non-native plants	<p>20. Within 1 year of signing the Agreement, the conservation team will develop, fund, and implement a weed management plan (approved by consensus) in conservation areas that includes repeated annual targeted surveys to detect invasions and treatment of invasive species as soon as detected. This plan can be incorporated as part of a range-wide monitoring plan.</p> <p>21. The weed management plan will identify treatment options for each known invasive species in the habitat of the species, with the goal of selecting the most appropriate option that controls weeds and minimizes adverse effects to Graham's or White River beardtongues and their native plant community.</p> <p>22. The conservation team will develop and implement a monitoring protocol in the weed management plan to determine the effectiveness of their actions.</p> <p>23. The conservation team will review and update the weed management plan annually based on surveys, monitoring, and other information sources, and create an annual schedule of work targeting priority areas.</p> <p>24. The weed management plan will develop and adopt best management practices for preventing the spread of invasive and/or exotic plants in the designated conservation areas on federal and non-federal lands.</p>
Competition	See conservation actions 20–24.
Community alteration	See conservation actions 20–24.
Small Population Size	
Stochastic events	<p>See conservation actions 1–7 and 15–16.</p> <p>25. Historical locations of <i>Penstemon scarious</i> var. <i>albifluvis</i> near the western end the species' range should be revisited for collection of new voucher specimens and samples for genetic testing. The conservation team will plan and implement a distribution/genetics study to determine overlap and/or division between <i>Penstemon scarious</i> var. <i>garettii</i> and <i>Penstemon scarious</i> var. <i>albifluvis</i> geographic ranges as part of this Agreement.</p>
Inbreeding depression	See conservation actions 1–7, 15–16, and 25.
Lower sexual reproduction	See conservation actions 1–7, 15–16, and 25.
Loss of genetic diversity	See conservation actions 1–7, 15–16, and 25.
Climate Change	
Mortality caused by drought	26. As part of demographic monitoring of the species, a component will be included to study the relationship between precipitation patterns and species' growth, reproduction and recruitment, and mortality. This may be accomplished by establishing weather-monitoring equipment at existing long-term demographic sites currently monitored by Red Butte Garden.

Stress, lack of reproduction and recruitment, and mortality caused by shifting rainfall patterns	See conservation action 26.
Habitat degradation	See conservation actions 1–3.
Wildfire	
Mortality	27. Any wildfire planning, suppression activities, and post-wildfire actions on federal and non-federal lands in occupied habitat will include mitigation consistent with the Agreement and include preseason input from the conservation team.
Community composition alteration	See conservation actions 20–24 and 27.
Post-fire response ground disturbance	See conservation action 27.
Increased invasion and competition from invasive species	See conservation actions 20–24 and 27.
Off-Road Vehicles	
Direct mortality	28. On BLM lands, traffic will be limited to designated routes, and routes will be considered for closure, limited use, or re-routing as appropriate to gain compliance and protect designated conservation areas. This will not include any routes claimed by Uintah County as public roads. 29. On non-federal lands where off-highway vehicle (OHV) use occurs, wherever possible, landowners and managers will attempt to re-route OHV use away from designated conservation areas and keep traffic on existing roads and trails.
Increased dust load	See conservation actions 1–3.
Fragmentation of habitat	See conservation actions 1–3.
¹ Survey/Monitoring/Best Management Practices:	
Prior to any surface disturbance in federal and non-federal conservation areas, surveys will be conducted within the area of disturbance and out to 91.4 m (300 ft) from the edge of the disturbance to determine species presence, population, and distribution. Surveys will follow standard survey protocol as detailed in the USFWS <i>Utah Field Office Guidelines for Conducting and Reporting Botanical Inventories and Monitoring of Federally Listed, Proposed and Candidate Plants</i> (2011).	
On all federal and non-federal lands, the landowner/manager will collect seeds and/or salvage a portion of plants from areas to be disturbed to ensure genetic representation of the species. Seeds can be used for restoration but at least a portion of these seeds should be given to Red Butte and Denver botanic Gardens for long-term storage.	

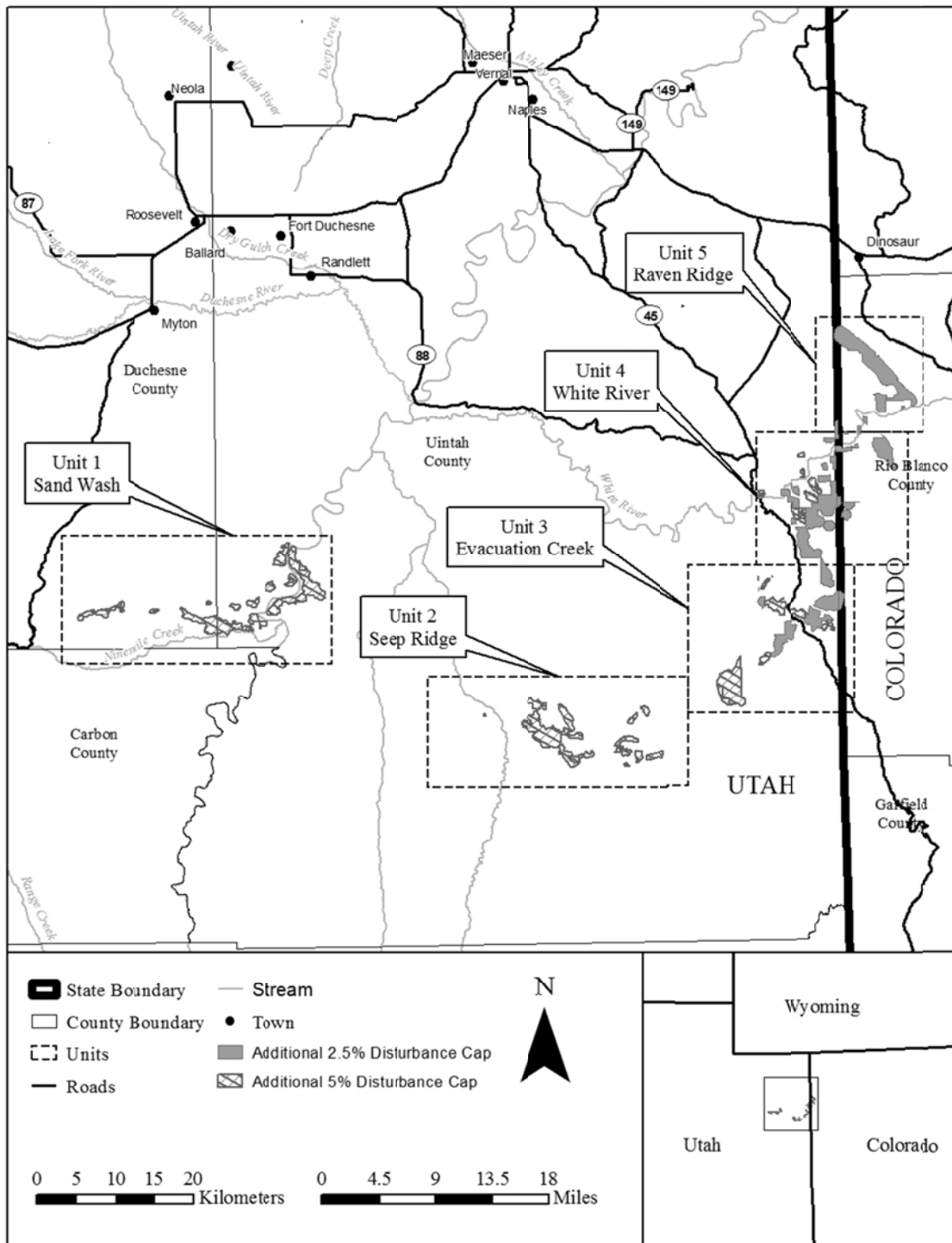


Figure 3: Designated conservation areas for Graham's and White River beardtongues delineated by units, with notation of the areas where the different disturbance caps apply.

The 2014 Conservation Agreement will result in the protection of 64 percent of Graham's beardtongue and 76 percent of White River beardtongues within designated conservation areas. These totals include protections across the range of both species on Federal, State, and private lands (Table 5). The remaining Graham's beardtongue plants on BLM lands outside of the designated conservation areas (representing an additional 4% of the total population) will be protected by a 91-m (300-ft) spatial buffer (all known White River beardtongue plants on BLM lands are within conservation areas). This conservation measure is consistent with BLM protections for the species since 2007. For our analysis of whether the 2014 Conservation Agreement sufficiently protects both species, we did not consider plants in conservation areas designated as interim, as these areas provide only short-term protections. Although these areas may in the future be converted to permanently designated conservation areas, they do not provide assurances for the long-term benefit of the species.

Table 5. Conservation areas by landowner for Graham's and White River beardtongues.

Species	Land ownership	Size of conservation area in hectares (acres)*	Number of plants	Percent of population
Graham's	BLM	15,579 (38,497)	18,702	46.4
	State	1,254 (3,099)	2,319	5.75
	Private	1,128 (2,787)	4,755	11.8
	Total	17,957 (44,373)	25,776	63.9
White River	BLM	8,678 (21,444)	7,482	61.2
	State	343 (847)	177	1.5
	Private	1,170 (2,890)	1,571	12.9
	Total	10,213 (25,238)	9,230	75.6
Both species combined	Total	17,957 (44,373)		

PECE Analysis

The purpose of PECE is to ensure consistent and adequate evaluation of recently formalized conservation efforts when making listing decisions. The policy provides guidance on how to evaluate conservation efforts that have not yet been implemented or have not yet demonstrated effectiveness. The evaluation focuses on the certainty that the conservation efforts will be implemented and the certainty that the conservation efforts will be effective. The policy presents nine criteria for evaluating the certainty of implementation and six criteria for evaluating the certainty of effectiveness for conservation efforts. These criteria are not considered comprehensive evaluation criteria. The certainty of implementation and the effectiveness of a formalized conservation effort may also depend on species-specific, habitat-specific, location-specific, and effort-specific factors. We consider all appropriate factors in evaluating formalized conservation efforts. The specific circumstances will also determine the amount of information necessary to satisfy these criteria.

To consider that a formalized conservation effort contributes to forming a basis for not listing a species, or listing a species as threatened rather than endangered, we must find that the conservation effort is sufficiently certain to be (1) implemented, and (2) effective, so as to have contributed to the elimination or adequate reduction of one or more threats to the species identified through the section 4(a)(1) analysis. The elimination or adequate reduction of section 4(a)(1) threats may lead to a determination

that the species does not meet the definition of threatened or endangered, or is threatened rather than endangered.

An agreement or plan may contain numerous conservation efforts, not all of which are sufficiently certain to be implemented and effective. Those conservation efforts that are not sufficiently certain to be implemented and effective cannot contribute to a determination that listing is unnecessary, or a determination to list as threatened rather than endangered. Regardless of the adoption of a conservation agreement or plan, however, if the best available scientific and commercial data indicate that the species meets the definition of “endangered species” or “threatened species” on the day of the listing decision, then we must proceed with appropriate rulemaking activity under section 4 of the Act. Further, it is important to note that a conservation plan is not required to have absolute certainty of implementation and effectiveness in order to contribute to a listing determination. Rather, we need to be certain that the conservation efforts will be implemented and effective such that the threats to the species are reduced or eliminated.

Using the criteria in PECE (68 FR 15100, March 28, 2003), we evaluated the certainty of implementation (for those measures not already implemented) and effectiveness of conservation measures in the 2014 CA pertaining to Graham’s and White River beardtongues. We determined that the measures will be effective at eliminating or reducing threats to the species because they protect occupied and suitable habitat from the effects of energy development, livestock grazing, invasive weeds, small population size and climate change, by instituting on-the-ground protections to better manage and

regulate disturbance in occupied habitat and habitats likely used by pollinators. We have a high degree of certainty that the measures will be implemented because the conservation team partners have a track record of implementing conservation measures for these species since 2007. Over approximately the past 6 years of implementation, BLM, the Utah Department of Natural Resources, and Uintah County have effectively implemented conservation measures from the 2007 Conservation Agreement for Graham's beardtongue including surveying and monitoring the populations of both species, and implementing avoidance buffers from ground-disturbing activities on BLM lands.

New conservation measures are prescribed by the 2014 CA and are already being implemented (see Table 3), including additional surveys and genetic studies. The 2014 CA has sufficient annual monitoring and reporting requirements to ensure that all of the conservation measures are implemented as planned, and are effective at removing threats to Graham's and White River beardtongues and their habitat. The collaboration between the Service, Uintah County, Rio Blanco County, the Utah Division of Wildlife Resources (UDWR), SITLA, PLPCO, and BLM requires regular conservation team meetings and involvement of all parties in order to fully implement the conservation agreement. Based on the implementation of previous actions of members of the conservation team, we have a high level of certainty that the conservation measures in the 2014 CA will be implemented and effective, and thus they can be considered as part of the basis for our final listing determination for Graham's and White River beardtongues.

Our detailed PECE analysis is available for review at <http://www.regulations.gov> and <http://www.fws.gov/mountain-prairie/species/plants/2utahbeardtongues/>.

Summary of Factors Affecting the Species

Section 4 of the Act (16 U.S.C. 1533), and its implementing regulations at 50 CFR part 424, set forth the procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants. Under section 4(a)(1) of the Act, we may list a species based on any of the following five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; and (E) other natural or manmade factors affecting its continued existence. Listing actions may be warranted based on any of the above threat factors, singly or in combination. Stressors that fall under each of these factors are discussed below individually. We then summarize where each of these stressors or potential threats falls within the five factors.

In 2008 and 2012, we participated in expert workshops—including experts from The Nature Conservancy, Red Butte Garden, the Utah Natural Heritage Program (UNHP), the Colorado Natural Heritage Program (CNHP), BLM, and the Natural Resources Conservation Service to evaluate the best available scientific information for Graham’s and White River beardtongues (The Nature Conservancy 2008, entire; Service 2012c, entire). We used the information from these workshops to complete a species

status assessment for both Graham's and White River beardtongues. We determined that both species need the following resources for viability:

- Suitable soils and geology
- Sufficient number of pollinators
- Intact associated and adjacent plant community (both within and outside of suitable or occupied habitat)
- Minimum reproductive effort or reproductive success
- Suitable microclimate conditions for germination and establishment
- Sufficient rain and temperatures suitable for breaking seed dormancy and successful reproduction (natural climate)
- Minimum habitat patch or population size
- Genetic diversity or heterozygosity
- Habitat connectivity and integrity
- Viable, long-lived seedbank
- Minimum number of individuals
- Minimum number of viable populations

The general list is the same for both Graham's and White River beardtongues because they grow in similar habitats in the same geographic area, even overlapping in places. However, specifics for each resource can differ between the two species.

To determine the current and future status of Graham's and White River beardtongues, through our species status assessment we evaluated if these resource needs are currently met and how these resources are likely to change in the future. If the resources are not currently met or are predicted to be unmet in the future, we determined the cause of the resource insufficiency. The underlying stressor causing the resource insufficiency is then considered as a potential threat to Graham's and White River beardtongues. We discuss these stressors in the following section.

Energy Exploration and Development

In our 2013 proposed rule, we concluded that energy development was a threat to Graham's and White River beardtongues because the species' ranges overlap almost entirely with oil shale and tar sands development areas, and traditional oil and gas drilling.

Potential impacts from energy exploration and development include the removal of soil and vegetation when unpaved roads, well pads, evaporation ponds, disposal pits, and pipelines are constructed (BLM 2008a, pp. 448–449). Increased disturbance from these developments, coupled with climate change (see Climate Change, below), would facilitate the invasion and spread of nonnative species such as cheatgrass (*Bromus tectorum*), halogeton (*Halogeton glomeratus*), purple mustard, and Russian thistle (*Salsola tragus*) (Brooks and Pyke 2001, entire; Grace *et al.* 2001, entire; Brooks 2003,

p. 432; Friggens *et al.* 2012, entire), which can outcompete native plants and increase the risk of catastrophic wildfires (see Wildfire and Invasive Weeds, below).

Energy development also results in increased road traffic and subsequent increases in dust emissions; for every vehicle travelling 1 mile (1.6 km) of unpaved roadway once a day, every day for a year, approximately 2.5 tons of dust are deposited along a 305-m (1,000-ft) wide corridor centered on the road (US Forest Service 1983, entire). Excessive dust can clog plant pores, increase leaf temperature, alter photosynthesis, and affect gas and water exchange (Sharifi *et al.* 1997, p. 842; Ferguson *et al.* 1999, p. 2, Lewis 2013, entire), negatively affecting plant growth and reproduction. Dust can affect plants up to 1,000 m (3,280 ft) away from the source (Service 2014a, entire). Effects of fugitive dust include species composition changes, altered soil properties, blocked stomata, reduced foraging capacity of pollinators, dehydration, reduced reproductive output, and a decline in reproductive fitness (Service 2014a, entire). A 300-ft buffer is the minimum distance needed in order to protect sensitive plant species (Service 2014a, p. 9).

Roads may act as a barrier to pollinator movement, for example by influencing bees to forage on only one side of the road (Bhattacharya *et al.* 2003, pp. 42–43) or within isolated habitat patches (Goverde *et al.* 2002, entire). Although bees and other pollinators are quite capable of crossing roads or other human-disturbed areas, the high site fidelity of bumblebees makes them more apt to remain on one side of a disturbed area (Bhattacharya *et al.* 2003, p. 42). The implications of this type of pollinator

behavior for rare plants is that the probability for outcrossing is reduced (Cane 2001, entire), thereby reducing genetic variability and reproductive success.

Habitat loss or fragmentation from energy development can result in higher extinction probabilities for plants because remaining plant populations are confined to smaller patches of habitat that are isolated from neighboring populations (Jules 1998, p. 1; Soons 2003, p. 115). Habitat fragmentation and low population numbers pose a threat to rare plant species' genetic potential to adapt to changing environmental conditions (Mathies *et al.* 2004, pp. 484–486). Smaller and more isolated populations produce fewer seeds and pollen, and thus attract fewer and a lower diversity of pollinators (Paschke *et al.* 2003, p. 1,258; Lienert 2004, p. 62); for a more complete discussion, see Small Population Size, below.

2014 CA protections—The 2014 CA establishes 17,957 ha (44,373 ac) of conservation areas on private, State, and public lands across the range of both beardtongue species—encompassing 64 percent of the known Graham's beardtongue individuals and 76 percent of the known White River beardtongue individuals. New surface disturbance acreage will be limited in designated conservation areas to 5 percent for Graham's beardtongue and 2.5 percent for White River beardtongue by landowner within each unit. The allowed new surface disturbance of 5 percent of the current baseline for Graham's beardtongue is higher than the 2.5 percent of the current baseline allowed for White River beardtongues, due to the larger range of the Graham's beardtongue. This is less disturbance than the Utah standards for traditional oil and gas

well pad spacing, which is roughly equivalent to 13 percent surface disturbance per section when considering one well per 40 acres and an average surface disturbance of 5.2 acres for each and associated infrastructure (Utah Administrative Code R649–3–2. Location and Siting of Vertical Wells and Statewide Spacing for Horizontal Wells). In addition, any limited surface disturbance within designated conservation areas will avoid plants by 91.4 m (300 ft). This avoidance distance will provide habitat and connectivity for pollinators and minimizes the effects of disturbance, which are greatest closest to the source. In addition, 300 ft is the standard avoidance buffer distance recommended to Federal agencies in the Service’s Section 7 consultations on nontribal lands for listed plants within the Uinta Basin based on a review of relevant literature (Service 2014a).

The BLM will institute additional protections on lands it manages outside of designated Conservation Areas by requiring surveys and avoidance of plants by 91.4 m (300 ft) from surface-disturbing activities. This measure protects an additional 1,631 plants of Graham’s beardtongue or 4.0 percent of the total population so that a total of 68 percent is protected by spatial buffers both within and outside of conservation areas. All but one White River beardtongue plant on BLM lands are incorporated into the conservation areas. In addition, the 91.4-m (300-ft) spatial buffer protects Graham’s and White River beardtongue plants that may be found on BLM lands in future surveys.

Any unavoidable impacts to individual plants will be offset by mitigation, such as protecting additional plants by adding new conservation areas or with contributions to a conservation fund that will be used to support conservation efforts for the plant

species. Overall, the establishment and management of conservation areas reduces the threats of surface disturbance, dust emissions, pollinator barriers, and habitat loss and fragmentation from energy development to Graham's and White River beardtongues by protecting an adequate amount of the species' (and associated pollinator) habitat and populations (Table 3 and Table 5), limiting surface disturbance, and maintaining buffer distances from known and future locations of plants on BLM lands. Limited surface disturbance within conservation areas will reduce potential fugitive dust and pollinator barriers impacts that otherwise may occur with full field development of oil and gas. Although we expect oil and gas development to continue with negative effects to a small percent of both populations, a large percent of the population of both species will be protected by implementing the measures in the conservation agreement. Therefore, we no longer consider energy development to be a threat to the species.

Oil Shale and Tar Sands

The Energy Policy Act of 2005 (42 U.S.C. 13201 *et seq.*) establishes that oil shale, tar sands, and other strategic unconventional fuels should be developed to reduce the nation's dependence on imported oil. The Energy Policy Act (42 U.S.C. 15927(m)(1)(B)) identifies the Green River Region, including the entire range of Graham's and White River beardtongues, as a priority for oil shale and tar sands development. Provisions of the Energy Policy Act of 2005 provide economic incentives for oil shale development. For example, the restrictions in the Mineral Leasing Act of 1920 (30 U.S.C. 181 *et seq.*) limited oil shale lease sizes to 2,072 hectares (ha) (5,120

acres (ac)), and restricted leasing opportunities to just one lease tract per individual or corporation. Lease size restrictions effectively limited development because of a lack of available acreage to accommodate necessary infrastructure and facilities. The Energy Policy Act of 2005 now allows an individual or corporation to acquire multiple lease tracts up to 20,234 ha (50,000 ac) in any one State, loosening the restrictions of the Mineral Leasing Act of 1920 (Bartis *et al.* 2005, p. 48).

As we discussed in our January 19, 2006 (71 FR 3158), and August 6, 2013 (78 FR 47590), proposed rules, Graham's beardtongue is closely associated with the richest oil shale-bearing strata in the Mahogany ledge, which makes the species highly vulnerable to extirpation from potential oil shale or tar sands mining (Shultz and Mutz 1979, p. 42; Neese and Smith 1982, p. 64; Service 2005, p. 5). The economic and technological feasibility of oil shale and tar sands development was uncertain when the original proposed listing rule was withdrawn in 2006 (71 FR 76024, December 19, 2006). However, in 2013, the BLM issued the OSTEIS for commercial leasing for oil shale and tar sands development in Colorado, Utah, and Wyoming. The 2013 OSTEIS Record of Decision (ROD) opens 145,848 ha (360,400 ac) in Utah and 10,522 ha (26,000 ac) in Colorado for oil shale leasing (BLM 2013a, p. 27), and 52,609 ha (130,000 ac) in Utah for tar sands leasing (BLM 2013a, p. 48).

Leasing for oil shale development on BLM lands has not yet occurred except for eight Research Development and Demonstration (RD&D) leases (1 in Utah and 7 in Colorado) (BLM 2013a, p. 15), but the area open for oil shale leasing and steps needed to

gain access to leases on these lands is authorized through the OSTEIS ROD (BLM 2013a, entire). Tar sands leasing on BLM lands is not restricted by the RD&D process, and leases may be obtained through an expression of interest and the BLM mineral leasing process.

In Utah, 33 and 52 percent, respectively, of Graham's and White River beardtongues' total populations of known individuals overlap the BLM-designated oil shale and tar sands leasing areas (Service 2014b, entire; Table 7 and Table 8). Designated oil shale leasing areas in Colorado do not overlap known populations for either beardtongue species and are at least 32 km (20 mi) away from the closest known populations (Service 2013, p. 7).

A majority of all known Graham's beardtongue and White River beardtongue plants are directly associated with the Mahogany ledge where it outcrops or is less than 152 m (500 ft) below the surface (Service 2013, p. 5). Surface strip mining is likely to be the preferred extraction method in areas with shallow overburdens (BLM 2012, p. A-22; Institute for Clean and Secure Energy 2013, p. 6), resulting in the complete loss of all surface vegetation.

About 48 percent and 39 percent, respectively, of Graham's and White River beardtongues occur on State and private lands where they were afforded little protection at the time of our proposed rule. We estimate that most known Graham's and White River beardtongues on State and private lands occur where the Mahogany

layer outcrops or is less than 152 m (500 ft) below the surface, making these areas more likely to be surface mined. As a result, plants in these areas are the most vulnerable to direct loss as oil shale and tar sands development expands across the region. In addition, land ownership throughout the Uinta Basin is a checkerboard of private, State, and Federal ownership. Losses of Graham's and White River beardtongue populations on private and State lands would result in indirect impacts from habitat fragmentation and the loss of population connectivity.

The Utah Division of Oil, Gas and Mining (UDOGM) has approved one large-scale oil shale mine for Red Leaf Resources, Inc., and six other exploration mines for oil shale, which overlap the ranges of Graham's beardtongue and White River beardtongue on private and State lands. In addition, two more permits for oil shale development, one for a small-scale mine and one for a large-scale mine, have been submitted to UDOGM for oil shale development on private or State lands. Red Leaf Resources, Inc., also announced that its field pilot test conducted in 2008 to 2009 performed as predicted, and they will begin their commercial operation when their regulatory permits are finalized (Red Leaf 2013a, entire; Red Leaf 2013b, entire). Red Leaf has filed a Notice of Intent to commence mining operations (Red Leaf 2014, entire), which was approved by UDOGM on Feb 20, 2014, and a subsequent amendment was approved on May 5, 2014 (UDOGM 2014, entire). A third oil shale development company has identified 2,833–3,642 ha (7,000–9,000 ac) for subsurface mining and is currently working through the National Environmental Policy Act (NEPA) process with BLM (BLM 2013e, p. 1). In our 2013 proposed rule (78 FR 47590), we knew of three oil shale projects and explorations that

were planned or ongoing on private, State, and BLM lands in Uintah County, Utah. As of March 2014 we know of five planned and ongoing projects for oil shale on private and State lands, including commencement of commercial scale development (Table 6).

Private and State lands (including SITLA lands) do not have the multistep regulatory requirements that Federal lands have, and they are presently available for oil shale development (Institute for Clean and Secure Energy 2013, p. 5). In addition, the oil shale resources on SITLA lands have, “the potential to support a sizeable commercial shale industry, and its resources are readily developable” (Institute for Clean and Secure Energy 2013 p. 5). The SITLA has sold oil shale leases that overlap both species and includes 23 percent and 9 percent of the total known populations of Graham’s beardtongue and White River beardtongue, respectively.

A market study of development of oil shale found that ex-situ extraction methods would break even at market values for oil at \$77.32 to \$91.65 per barrel including hurdle costs, depending on the technology, with air-fired technology at the lower end (Institute for Clean and Secure Energy 2013, pp. 140–142). Enefit Energy estimates operating costs for oil shale energy development to be considerably lower at \$35 per barrel (Enefit 2014, entire). Crude oil prices for Utah have been above \$78 per barrel in 27 of the past 36 months (January 2011–December 2013) with annual averages above \$82 per barrel from 2011 to 2013 (US EIA 2014a, entire). Forecasts show that prices are to remain above the threshold of \$78 per barrel through the end of the analysis period of 2015 (EIA 2014b, p. 28). In addition, the reference price for

oil is expected to be above \$92 per barrel from 2015 to 2040 (US EIA 2014c, p.6).

Despite the current lack of commercial-scale oil shale operations, the technology is feasible, the resource is available—35,701 ha (88,220 ac) of SITLA lands have been leased, 145,848 ha (360,400 ac) of Federal lands in Utah will be made available for leasing after conducting RD&D projects, Red Leaf filed a Notice of Intent in 2014 to commence a large scale oil shale mining operation, and crude oil prices are projected to remain at favorable levels. All these factors lead us to conclude that oil shale development is highly likely to happen in the future.

Table 6. Current and proposed oil shale and tar sands on State and private lands affecting Graham's and White River beardtongues.

Project	Project status	Maximum Disturbance¹ Graham's beardtongue (Percent of population) population)	Maximum Disturbance White River beardtongue (Percent of population)	Protection under 2014 CA²
Enefit American Oil	NEPA process ongoing	15.2	24.4	2,900 acres in conservation area.
Red Leaf Resources	Utah Division of Oil, Gas and Mining (UDOGM) large mine permit active	3.8	0.17	0
Ambre Energy	UDOGM small mine permit active	0.75	8.1	< 10 acres in interim conservation area
TOMCO Energy	UDOGM large mine permit in process	15.4	0	1,053 acres in interim conservation area—likely to be developed during the 15-year 2014 conservation

				agreement
PetroDome North America	UDOGM small mine permit in process	3.3	0.6	0
TOTAL		38.25	32.87	

1. Maximum disturbance assumes that all beardtongues on the entire property owned or leased are affected by oil shale development operations.

2. Conservation areas will abide by the conditions of the 2014 Conservation Agreement (CA) for the 15-year term of the CA. Interim conservation areas will follow the measures of the 2014 CA until such time as the lessee is ready to develop, which may be shorter than a 15-year timeframe. Interim conservation measures were not considered in our analysis as they provide only temporary protection to the species.

Tar sands extraction is also technically feasible (Institute for Clean and Secure Energy 2013, p. 12). Tar sands lease areas on BLM lands overlap 20 and 0.1 percent of the total known populations of Graham's and White River beardtongues, respectively. The impacts of tar sands mining will be similar to those from oil shale mining. We are aware of only one approved tar sands project in Utah (Service 2014, p. 3), and the project does not overlap with any known populations of Graham's or White River beardtongues. There are three active exploration permits on record with UDOGM and one proposed exploration project (Service 2014c, p. 3). None of these projects overlap with known locations of either beardtongue species.

In summary, the project initiation and the recent BLM leasing decisions indicate the renewed interest in oil shale and tar sands mining and the increased likelihood of development across the ranges of these two species. Over 60 percent of Graham's beardtongue and White River beardtongue plants are directly associated with shallow outcroppings of the Mahogany ledge, which are likely to be surface mined, resulting in the complete loss of vegetation. We estimate that as much as 81 and 91 percent of the

total known populations of Graham's and White River beardtongues, respectively, would be vulnerable to direct loss and indirect negative impacts such as habitat fragmentation from oil shale and tar sands development without additional protections. However, the 2014 CA provides protections to avoid, minimize, and mitigate the impacts of oil shale and tar sands development, including the establishment of conservation areas and use of surface-disturbance avoidance buffers, effectively reducing threats to the species (see discussion of 2014 CA Protections under Energy Exploration and Development). The establishment of conservation areas will reduce the threats to the species from oil shale and tar sands development by protecting 64 percent and 76 percent of Graham's and White River respectively from large-scale surface disturbance and habitat fragmentation. Therefore, we no longer consider oil shale and tar sands development to be a threat to the species.

Traditional Oil and Gas Drilling

Historically, impacts to both beardtongue species from traditional oil and gas development were largely avoided because development within the species' habitat was minimal. However, the previously described Energy Policy Act of 2005 enables leasing of oil and gas and tar sands separately, even when the two are found in the same area. Previously, the law required a combined tar sands/oil and gas lease, effectively delaying leasing and extraction of oil and gas in tar sand areas because of concerns about conflicts between tar sands and traditional oil and gas development. Overall, the Energy Policy Act of 2005 effectively opened the entire range of both species to leasing for oil

and gas development and made that leasing more efficient and effective.

At the time of publication of our 2013 proposed rule, the impacts of traditional oil and gas development on Graham's and White River beardtongues were expected to be high (BLM 2008b, p. 457). Although a high level of development within these species' habitats was not yet realized, we expected it to increase in the future. Most of the ranges of Graham's and White River beardtongues are underlain with deposits of traditional hydrocarbon resources, primarily natural gas (Service 2013, p. 8). In the past two decades, oil and gas production in Uintah County, Utah, has increased substantially. For example, oil production in Uintah County increased about 60 percent from 2002 to 2012, and gas production increased about 25 percent over this same time period (UDOGM 2012, entire). Drilling activities in Uintah County continue to increase: The number of new wells drilled in Uintah County was 316 in 2009, 631 in 2012 (UDOGM 2012, entire), and 521 in 2013 (UDOGM 2014, entire).

To update and quantify how much drilling has occurred within Graham's and White River beardtongues' habitat, we used the following methods to identify an analysis area for impacts to the species based upon the currently known plant locations and adjacent essential pollinator habitat. For Graham's beardtongue, we created an analysis area using known locations plus a distance of 700 m (2,297 ft) for pollinators. For White River beardtongue, we created an analysis area using known locations plus a distance of 500 m (1,640 ft) for pollinators. These distances (700 m and 500 m) were based on pollinator travel distance for important pollinators for each species (see *Species*

Information, “Biology” for each plant, above) and also matched our proposed critical habitat designation (78 FR 47832; Aug. 6, 2013). We then calculated the number of wells currently drilled within these areas.

Within the Graham’s beardtongue analysis area, well drilling has occurred at a comparatively slow pace thus far: As of March 2014, 88 well pads were developed or approved within the analysis area for Graham’s beardtongue, and the majority (75) of these are in Utah (Service 2014b, entire), which also corresponds to the majority of the range of the species. We do not know the area of actual surface disturbance associated with each well, so we estimated 2 ha (5 ac) of surface disturbance per well pad (BLM 2008b, p. 4-3)), including disturbance from associated roads and pipelines. Accordingly, we estimate that 103 ha (255 ac) of Graham’s beardtongue habitat are disturbed from energy development, which is less than 1 percent of the total area included within the analysis area across the Graham’s beardtongue’s range.

Development within the White River beardtongue analysis area is similar; as of March 2014, 21 well pads were developed or approved in the White River beardtongue analysis area, 13 of which are in Utah (Service 2014b, entire). Less than 1 percent (26 ha (65 ac)) of the total area included within the White River beardtongue analysis area is likely disturbed by existing oil and gas activities.

Approximately 27 percent of the analysis areas for Graham’s beardtongue and 13 percent for White River beardtongue, respectively, on State and Federal land are

leased for traditional oil and gas development (Service 2014b, entire). At the time of this analysis, one planned seismic exploration project overlaps with habitat for both beardtongue species. The initiation of this project indicates that traditional oil and gas development will very likely increase in the habitat of both of these species. Our estimate of impacts is likely an underestimate because we do not have information about how much private land is planned for development.

Although some oil and gas drilling has impacted individuals of Graham's and White River beardtongues, development is not at a high enough level to negatively impact the species. Populations monitored for 9 years have been stable (Dodge and Yates 2011, entire), and neither beardtongue appears to suffer from pollinator limitation (Lewinsohn and Tepedino 2007, entire; Dodge and Yates 2009, p. 12). However, substantial numbers of Graham's and White River beardtongue individuals (and their habitat) occur in areas that are leased for oil and gas development (Tables 5 and 6), and thus it is reasonable to conclude that the impacts of oil and gas activity will increase in the future as additional areas are developed. However, the 2014 CA provides protections to avoid, minimize, and mitigate the impacts of oil and gas development, including the establishment of conservation areas and use of surface-disturbance avoidance buffers, effectively reducing threats to the species (see discussion under 2014 CA protections under Energy Exploration and Development section above). Therefore, we no longer consider traditional oil and gas development to be a threat to the species.

Summary of All Energy Development

Since our proposed rule (78 FR 47590) we have learned of additional planned oil shale projects that overlap known Graham's or White River beardtongue plant locations. If these projects are fully implemented, their direct impacts would reduce the redundancy and representation of both species. Although commercial production of oil shale and tar sands is in its infancy, the commencement of several large projects and State permitting of one large oil shale mining operation indicates progress toward imminent future development of oil shale and tar sands resources within the range of these species. Without protective measures (i.e., 2014 CA), approximately 86 and 100 percent of the total known populations of Graham's and White River beardtongues (including those in the center of their ranges) are vulnerable to direct loss and the effects of increased disturbance. Approximately 62 and 40 percent of Graham's beardtongue and White River beardtongue, respectively, are on BLM lands within areas that are either leased for oil and gas development or open to leasing for oil shale and tar sands; approximately 86 and 100 percent of all known Graham's and White River beardtongue plants fall within areas that are open for oil shale and tar sands leasing (see Table 7 and Table 8). Of all known Graham's and White River beardtongue plants, 27 and 12.5 percent, respectively, fall within areas that are leased by the BLM and the State of Utah for traditional oil and gas development.

Table 7. Potential disturbance to Graham's beardtongue across all landowner types prior to and after enactment of the 2014 Conservation Agreement (CA).

Graham's beardtongue	Percent of population vulnerable to disturbance without 2014 CA Protections		Percent of population vulnerable to disturbance with 2014 CA Protections	
	Number of plants	Percent of total	Number of plants	Percent of total
Existing BLM oil and gas leases	4,619	11.5	770	2
BLM oil shale and tar sands lease areas	13,449	33	910	2
Total number of plants that overlap with all energy types on BLM lands or leases	16,085	40	1,436	4
Existing State of Utah oil, gas, and oil shale leases	11,212	29	9,458	23
Private lands (we assume all of these lands are open to energy development of any kind)	8,525	21	3,761	9
Total number of plants that overlap with all energy types across all landowners	35,126	87	14,345	36

Table 8. Potential disturbance to White River beardtongue across all landowner types prior to and after enactment of the 2014 Conservation Agreement (CA). Numbers may not sum due to rounding.

White River beardtongue	Percent of population vulnerable to disturbance without 2014 CA protections		Percent of population vulnerable to disturbance with 2014 CA protections	
	Number of plants	Percent of total	Number of plants	Percent of total
Existing BLM oil and gas leases	1,238	10	1	<0.001
BLM oil shale and tar sands lease areas	5,899	48	0	0
Total number of plants that overlap with all energy types on BLM lands or leases	7,038	58	1	0
Existing State of Utah oil, gas and oil shale leases	1,276	10	1,100	9
Private lands (we assume all of these lands are open to energy development of any kind)	3,458	28	1,884	15
Total number of plants that overlap with all energy types across all landowners	11,772	96	2,985	24

However, as described above (Energy Exploration and Development, 2014 CA Protections) and in our PECE analysis, the 2014 CA provides additional protections, including the establishment of conservation areas and use of surface disturbance avoidance buffers, effectively reducing threats from energy development to the species. Therefore, we no longer consider energy development to be a threat to either species.

Grazing and Trampling

In our 2013 proposed rule we found grazing to be a contributing factor to cumulative threats to the species, but not a threat by itself (*see* Cumulative Effects from All Factors, below). Invertebrates, wildlife, and livestock graze directly on individuals of Graham's and White River beardtongues (Sibul and Yates 2006, p. 9; Dodge and Yates 2010, p. 9; 2011, pp. 9, 12; UNHP 2012, entire). Grazers feed on all parts of the plant, including the seeds, damaging or destroying individual plants and effectively reducing their reproductive success.

It is likely that livestock are not the primary grazers of Graham's or White River beardtongues. High rates of herbivory occur from invertebrates, rabbits, cattle, deer, and sheep, and herbivory results in reduced fruit and seed production (Dodge and Yates 2011, pp. 7, 9). In particular, tiger moth caterpillars (possibly *Arctia caja utahensis*) have been identified foraging on Graham's beardtongue plants (Dodge and Yates 2011; Tepedino 2012).

At one study site, herbivory rates (measured by the number of plants browsed) were as high as 68 percent, but fluctuated greatly (Dodge and Yates 2011, entire). Herbivory appeared to decrease at times due to delayed plant development during cool, wet springs (Dodge and Yates 2011, pp. 10–11). Despite high levels of herbivory, the monitored populations were mostly stable across 9 years (McCaffery 2013a, p. 4). Presumably, beardtongues would be adapted to herbivory by native grazers, which may explain why monitored populations continue to remain stable despite high levels of herbivory.

Grazing occurs throughout the range of Graham's and White River beardtongues. Approximately 52 percent of all known Graham's beardtongue plants and 61 percent of all White River beardtongue plants occur in 19 grazing allotments on BLM lands. Seasons of use vary considerably, with most allotments grazed over the winter (from November or December to April), although some allotments are grazed in the spring and summer (BLM 2008c, pp. J1-4). Grazing in the spring and summer are more likely to directly impact beardtongue individuals than grazing in the winter. Most White River beardtongue plants occur within six allotments: four sheep allotments with a season of use from October to May, one sheep allotment (Raven Ridge in Colorado) grazed from November to February, and one cattle allotment with season of use from April to June and October to February (BLM 2008c, pp. J1-4). Sheep are more likely to graze on forbs than cattle (Cutler 2011, entire), thus beardtongue individuals within sheep allotments are more likely to be grazed than those in cattle allotments. Sheep grazing can result in the removal of inflorescences of Graham's beardtongue, thereby preventing reproduction from occurring (Reisor 2014b; p. 2). Overall, grazing pressure may have less of an impact on the beardtongues now than it has in the past—in the past decade, BLM has reduced the number of grazing sheep by half on many of the allotments (Cutler 2011, entire). Grazing also likely occurs across areas owned by other landowners, although we do not have data on grazing on these other lands.

Besides impacts from grazing, which we do not find is negatively impacting Graham's or White River beardtongue at the species level, domestic livestock can

impact rare and native plants by trampling them (71 FR 3158, January 19, 2006). We believe one population of Graham's beardtongue was eradicated by livestock trampling (Neese and Smith 1982, p. 66). Winter sheep grazing is the principal use across the range of White River beardtongue habitat, where sheep trailing (walking) likely results in damage or loss of plants (Franklin 1995, p. 6; UNHP 2012, entire). It is likely that some individuals of both beardtongue species, and particularly White River beardtongue as it tends to grow on slightly steeper slopes (see *Species Information*, "Habitat" for both beardtongues above), are afforded some protection from trampling by cattle, as cattle generally avoid steep slopes. However, this characteristic would not prevent trampling by sheep, which are not deterred by steep slopes.

Livestock grazing can negatively impact native plants indirectly through habitat degradation or by influencing plant community composition. Across the Colorado Plateau, livestock trampling and trailing breaks and damages biological soil crusts (Belnap and Gillette 1997, entire); alters plant community composition (Cole *et al.* 1997, entire); spreads and encourages weed seed establishment (Davies and Sheley 2007, p. 179); increases dust emissions (Neff *et al.* 2008, entire); and compacts soils, affecting water infiltration, soil porosity, and root development (Castellano and Valone 2007, entire). Crusts are not known to be a major component of the soils that Graham's and White River beardtongues inhabit, but livestock likely have altered the physical features of the plants' habitats. Although the best available data do not indicate how livestock grazing has indirectly impacted Graham's beardtongue or White River beardtongue

habitat, the invasive species cheatgrass, purple mustard, halogeton, and prickly Russian thistle have been documented growing with both beardtongues (see Invasive Weeds, below) (Fitts and Fitts 2009, p. 23; CNHP 2012, entire; Service 2012a, entire; UNHP 2012, entire). We assume that grazing has caused ecological changes, including nonnative weed invasion and other physical changes (e.g., loss of biological soil crusts), within beardtongue habitats (Mack and Thompson 1982, entire; Cole *et al.* 1997, entire). We do not know the extent and severity of these changes.

In summary, herbivory and trampling from grazing on some locations of Graham's and White River beardtongues appear to be severe during some years, and it is likely that similar impacts occur across the ranges of the species. The documented effects of herbivory and trampling on Graham's and White River beardtongues to date are limited to a reduction in reproductive output in some years at specific sites and the possible loss of one historical population, rather than widespread impacts on habitat or population-level impacts on the species. Despite high levels of herbivory, monitored populations appear to be stable. At present, we find that both species have sufficient resiliency, redundancy, and representation to recover from existing grazing and trampling impacts, and we do not consider grazing to be a threat to these species by itself (see Cumulative Effects from All Factors, below, for more information).

2014 CA protections—The 2014 CA provides conservation measures to address the effects of livestock grazing on both species wherever they occur locally. The conservation team will develop and implement a monitoring plan to detect impacts to

Graham's and White River beardtongues from livestock grazing. Where impacts are detected, BLM will adjust grazing regimes or take other measures to reduce these impacts. BLM can adjust grazing regimes by changing the season of use to ensure plants are not grazed during the growing period, reduce the number of livestock, rest and rotate pastures, and avoid suitable areas within pastures. This conservation measure will not only provide us with better information about the effects of livestock grazing, but it will also employ conservation measures at specific species occurrences where livestock grazing may be affecting the species.

Unauthorized Collection

In our 2013 proposed listing rule (71 FR 3158, January 19, 2006), we determined that unauthorized collection was not a threat to the species. Graham's beardtongue is a unique and charismatic species that is prized by collectors and, at least at one point in time, was available commercially online (71 FR 3158, January 19, 2006). However, we are not aware of any recent attempts to collect this species without proper authorizations. Since our 2013 proposed rule (78 FR 47590), we have no new information about the potential threat of unauthorized collection. Therefore, we do not consider unauthorized collection a threat to either beardtongue species.

Off-highway Vehicle Use

In our 2013 proposed listing rule, we found that the use of off-highway or off-road vehicles (OHVs) was not a threat to either beardtongue species. The use of OHVs may result in direct loss or damage to plants and their habitat through soil compaction, increased erosion, invasion of noxious weeds, and disturbance to pollinators and their habitat (Eckert *et al.* 1979, entire; Lovich and Bainbridge 1999, p. 316; Ouren *et al.* 2007, entire; BLM 2008b, pp. 4-94; Wilson *et al.* 2009, p. 1). However, to date, little OHV use has occurred within the ranges of Graham's beardtongue and White River beardtongue. For example, unauthorized OHV use was observed at only four locations within White River beardtongue occupied habitat 10 to 20 years ago (UNHP 2012, entire). Federal and industry personnel were increasingly using OHVs in oil and gas field surveys and site location developments prior to 2008. However, since 2008, the revised Vernal Field Office RMP limits all vehicles to designated routes (BLM 2008c, p. 46). This protective measure provides conservation benefits within the habitat of Graham's and White River beardtongues. We do not have any additional information regarding impacts to the species from off-highway vehicle use since our 2013 proposal (78 FR 47590). Given the low levels of documented unauthorized OHV use and the protections provided by the BLM Vernal RMP, we do not consider OHV use a threat to either beardtongue species.

2014 CA protections—In addition to the protective measures (i.e., limited to designated routes) provided in the Vernal RMP, the 2014 CA specifies that BLM will identify areas for closure or limited use as needed to protect the species through their travel management process. On non-Federal lands, landowners will attempt to keep

OHV traffic away from designated conservation areas. These measures will help to prevent OHV use from becoming a threat to the species in the future.

Road Maintenance and Construction

In our 2013 proposed listing rule we found that road maintenance and construction was not a threat to Graham's or White River beardtongues. Roads that cross through rare plant habitat can destroy habitat and populations, increase road dust, and disturb pollinators (Trombulak and Frissell 2000, entire). We consider this issue separately from roads created for oil and gas development (see Energy Exploration and Development, above), although the effects are the same.

Many unpaved county roads cross through Graham's and White River beardtongue habitat, and most of these roads have existed for decades. Plants located near unpaved roads are prone to the effects of dust, fragmentation, and pollinator disturbance (see Energy Exploration and Development, above, for a thorough discussion of road effects). Two long-term monitoring plots for Graham's and White River beardtongues are immediately adjacent to unpaved roads, and these populations were stable over nine years of the study (Dodge and Yates 2011, pp. 9, 12; McCaffery 2013a, pp. 18–19). However, one monitoring plot of White River beardtongue produces fewer flowers and fruits than other sites of White River beardtongue, potentially because of increased disturbance due to the nearby road (Dodge and Yates 2011, p. 12)

Conflicts can also arise from new paved roads or road upgrades, as described below. For example, in 2012, Seep Ridge Road, a formerly unpaved county road crossing through occupied Graham's beardtongue habitat, was realigned and paved. At least 322 individuals were within 91.4 m (300 ft) of the proposed right-of-way, and the project resulted in direct impacts to at least 31 Graham's beardtongue individuals that were transplanted out of the widened road right-of-way, but did not survive (Reisor 2013, entire; Roe 2014, pers. comm.). The paving of Seep Ridge Road reduced the impacts of fugitive dust, but the widened road corridor directly decreased the number of plants on the east side of the road and may impede pollinator movement, leading to this population of Graham's beardtongue becoming more isolated.

In summary, road maintenance and construction can destroy habitat and fragment populations, but this impact is site-specific and does not occur across the entire range of either species. We are not aware of other road construction or maintenance projects that have occurred, or are proposed to occur, in areas where they would impact Graham's beardtongue or White River beardtongue. Therefore, we do not consider road maintenance and construction to be a threat to either beardtongue species.

2014 CA protections—The 2014 CA designated conservation areas for both beardtongue species. Within designated conservation areas, surface disturbance will be limited to 5 percent new disturbance where Graham's beardtongue occurs and 2.5 percent new disturbance in areas occupied by White River beardtongue. In addition, disturbance such as road construction will avoid plants by 91.4 m (300 ft) within conservation areas

and on BLM lands. These measures will help prevent road construction and maintenance from becoming threats to the species in the future.

Wildfire

In our 2013 proposed listing rule we found wildfire to be a contributor to cumulative threats to the species, but not to be a threat by itself (*see Cumulative Effects from All Factors*, below). In 2012, the Wolf Den Fire, believed to be started by dry lightning, burned 8,112 ha (20,046 ac) in Uintah County, including 394 ha (974 ac), or approximately 1.5 percent, of the area within 700 m (2,297 ft) of known points of Graham's beardtongue and approximately 563 known plants (1.4 percent of the total known number of plants). No individuals of White River beardtongue were affected by this fire. Fires do not occur frequently in Graham's beardtongue or White River beardtongue habitat, but fire frequency and intensity is likely to increase with increased invasive weeds and climate change (*see **Invasive Weeds, Climate Change, and Cumulative Effects from All Factors***, below, for more information). In addition, we do not yet know how these species respond to fire. It is likely that with patchy, low-intensity burns they would be able to resprout from their roots, which we have documented in the field for Graham's beardtongue (Brunson 2012, entire). Overall, we do not consider wildfire alone to be a threat to either species.

2014 CA protections—The conservation team will provide input into wildfire planning and post-wildfire actions in designated conservation areas. This measure will

help to prevent unnecessary impacts to the species from pre- and post-planning and mitigation of wildfire activities.

Invasive Weeds

In our 2013 proposed listing rule we found invasive weeds to be a contributor to cumulative threats to the species, but not to be a threat by itself (Cumulative Effects from All Factors, below). Cheatgrass, halogeton, prickly Russian thistle, and purple mustard occur in Graham's beardtongue habitat (71 FR 3158, January 19, 2006; Service 2012c, entire), and may be extensive at site-specific locations (Malone 2014, p. 2.). In addition, invasive weeds are numerous in the habitat and plant communities immediately adjacent to beardtongue species habitat, most notably in disturbed areas (for example, along roads and well pads) (Service 2012c, entire).

The spread of nonnative, invasive species is considered the second largest threat to imperiled plants in the United States (Wilcove *et al.* 1998, p. 2). Invasive plants—specifically exotic annuals—negatively affect native vegetation, including rare plants. One of the most substantial effects is the change in vegetation fuel properties that, in turn, alters fire frequency, intensity, extent, type, and seasonality (Menakis *et al.* 2003, p. 282; Brooks *et al.* 2004, entire; McKenzie *et al.* 2004, entire). Shortened fire return intervals make it difficult for native plants to reestablish or compete with invasive plants (D'Antonio and Vitousek 1992, pp. 68–77). Invasive weeds can exclude native plants and alter pollinator behaviors (D'Antonio and Vitousek 1992, pp. 68–77; DiTomaso

2000, p. 257; Mooney and Cleland 2001, pp. 74–75; Traveset and Richardson 2006, pp. 211–213). For example, cheatgrass outcompetes native species for soil, nutrients, and water (Melgoza *et al.* 1990, pp. 9–10; Aguirre and Johnson 1991, pp. 352–353).

Cheatgrass is a particularly problematic nonnative, invasive annual grass in the Intermountain West and, as discussed above, has been documented in Graham's and White River beardtongue habitat. If already present in the vegetative community, cheatgrass increases in abundance after a wildfire, increasing the chance for more frequent fires (D'Antonio and Vitousek 1992, pp. 74–75). In addition, cheatgrass invades areas in response to surface disturbances (Hobbs 1989, pp. 389–398; Rejmanek 1989, pp. 381–383; Hobbs and Huenneke 1992, pp. 324–330; Evans *et al.* 2001, p. 1,308). Cheatgrass is likely to increase due to climate change because invasive annuals increase biomass and seed production at elevated levels of carbon dioxide (Mayeaux *et al.* 1994, p. 98; Smith *et al.* 2000, pp. 80–81; Ziska *et al.* 2005, p. 1,328).

Overall, invasive species are present but not extensive across most of the beardtongues' occupied habitats. Therefore, we do not currently consider invasive weeds alone to be a threat to either beardtongue species, but we later evaluate cumulative effects with energy development and climate change (see Cumulative Effects from All Factors, below for more information).

2014 CA protections—The conservation team committed to developing, funding, and implementing a weed management plan in designated conservation areas; the plan

will include prevention measures, surveys to detect invasion, treatment options, and monitoring plans. The conservation team will develop annual work plans adapted to best prevent, detect, and manage invasive weeds. When enacted, this conservation measure will reduce the threats posed by invasive weeds to both beardtongue species when considered cumulatively with other impacts.

Small Population Size

In our 2013 proposed listing rule we found small population size to be a contributor to cumulative threats to the species, but not to be a threat by itself (Cumulative Effects from All Factors, below). We lack complete information on the population genetics of Graham's and White River beardtongues. Preliminary genetic analysis shows that both beardtongues have less diversity than more common beardtongue species that have overlapping ranges (Arft unpublished report 2002). As previously described (see **Background**, "Biology" for both plants, above), both species have mixed mating systems and are thus capable of producing seed through self-fertilization or cross-pollination. However, the highest number of seeds and fruits are produced when flowers are cross-pollinated (Lewinsohn and Tepedino 2007, pp. 233–234; Dodge and Yates 2009, pp. 9–11). Increased disturbance and habitat fragmentation resulting in smaller population sizes could negatively impact both species because there would be fewer plants available for cross-pollination.

Small populations and species with limited distributions are vulnerable to relatively minor environmental disturbances (Given 1994, pp. 66–67). Small populations also are at an increased risk of extinction due to the potential for inbreeding depression, loss of genetic diversity, and lower sexual reproduction rates (Ellstrand and Elam 1993, entire; Wilcock and Neiland 2002, p. 275). Lower genetic diversity may, in turn, lead to even smaller populations by decreasing the species' ability to adapt, thereby increasing the probability of population extinction (Barrett and Kohn 1991, pp. 4, 28; Newman and Pilson 1997, p. 360).

Populations of either species with fewer than 150 individuals are more prone to extinction from stochastic events than larger populations (McCaffery 2013b, p. 1). Overall, it appears that Graham's beardtongue has many small populations scattered across its range, although the largest population (population 19,) contains more than 11,000 plants. Of the 24 populations of Graham's beardtongue, approximately 13 contain fewer than 150 known plants. That means more than half the known populations are more prone to extinction from stochastic events due to small population size. However, these populations account for only 1.4 percent of the total known number of plants of Graham's beardtongue. In addition, the species' widespread distribution may contribute to Graham's beardtongue's overall viability and potential resilience. For example, small-scale stochastic events, such as the erosion of a hillside during a flood event, will likely impact only a single population or a portion of that population. Even larger, landscape-level events such as wildfires are not likely to impact the species as a whole (see Wildfire, above). We do not find that small population size is a species-level

concern for Graham's beardtongue (see Cumulative Effects from All Factors, below, for additional information).

White River beardtongue has only 8 populations, and 2 of these have fewer than 150 individual plants. These two smaller populations account for less than 1 percent of the total species' population. However, large areas of suitable habitat remain unsurveyed, so this species may be more widely distributed, and populations are likely to have different numbers of plants than presented here. Overall, this species' range is much smaller than that of Graham's beardtongue, and thus we conclude that White River beardtongue may be more prone to extinction from landscape-level events. However, in the absence of information identifying threats to the species and linking those threats to the rarity of the species, we do not consider small population size alone to be a threat. A species that has always been rare, yet continues to survive, could be well equipped to continue to exist into the future. White River beardtongue likely fits this category, so persistence may be likely despite its small population size. Many naturally rare species have persisted for long periods within small geographic areas, and many naturally rare species exhibit traits that allow them to persist, despite their small population sizes. Consequently, the fact that a species is rare does not necessarily indicate that it may be in danger of extinction in the future.

Based on Graham's and White River beardtongues' current population numbers and preliminary demographic analyses showing that monitored sites are, for the most part, stable (McCaffery 2013a, entire), we conclude that small population size is not

currently a threat to these species. In addition, a population viability analysis for both species indicates a high likelihood of persistence over the next 50 years for populations with more than 116 plants for Graham's beardtongue and 259 plants for White River beardtongue. However, we further evaluated cumulative effects associated with energy development, grazing, invasive species, and climate change (see Cumulative Effects from All Factors, below).

2014 CA protections—The designation of conservation areas protect 64 and 76 percent of the populations of Graham's and White River beardtongues respectively. An additional 4% of Graham's beardtongue population will be protected by spatial buffers outside of conservation areas on BLM lands. This conservation measure is consistent with BLM protections for the species since 2007. Conservation areas include subpopulations that are large enough (>116 Graham's beardtongue and >259 White River beardtongue) that they have a low chance of extinction over the next 50 years (McCaffrey 2013a). The conservation areas also protect many of the smaller populations, ensuring population connectivity. In addition, the conservation team will plan and implement a study to better understand the genetic representation of White River beardtongue and how it is related with other closely related beardtongue species. The protections in the 2014 CA prevent small population size from becoming a threat to either beardtongue species.

Climate Change

In our 2013 proposed rule we found climate change to be a contributor to cumulative threats to the species, but not to be a threat by itself (Cumulative Effects from All Factors, below). Our analyses under the Act include consideration of ongoing and projected changes in climate. The terms “climate” and “climate change” are defined by the Intergovernmental Panel on Climate Change (IPCC). “Climate” refers to the mean and variability of different types of weather conditions over time, with 30 years being a typical period for such measurements, although shorter or longer periods also may be used (IPCC 2007, p. 78). The term “climate change” thus refers to a change in the mean or variability of one or more measures of climate (e.g., temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (IPCC 2007, p. 78). Various types of changes in climate can have direct or indirect effects on species. These effects may be positive, neutral, or negative and they may change over time, depending on the species and other relevant considerations, such as the effects of interactions of climate with other variables (e.g., habitat fragmentation) (IPCC 2007, pp. 8–19). In our analyses, we use our expert judgment to weigh relevant information, including uncertainty, in our consideration of various aspects of climate change.

Climate change is potentially impacting Graham’s and White River beardtongues now, and could continue to impact these species into the future. Over the last 50 years, average temperatures have increased in the Northern Hemisphere, and extreme weather events have changed in frequency or intensity, including fewer cold days and nights, fewer frosts, more heat waves, and more hot days and nights (IPCC 2007, p. 30). In the

southwestern United States, average temperatures increased approximately 1.5 degrees Fahrenheit (°F) compared to a 1960 to 1979 baseline (Karl 2009, p. 129). Climate modeling is not currently forecasting at a level of detail at which we can predict the amount of temperature and precipitation change precisely within the limited ranges of these two beardtongue species. Therefore, we generally address what could happen under current climate projections based upon what we know about the biology of these two species.

Climate changes will continue as hot extremes, heat waves, and heavy precipitation will increase in frequency, with the Southwest experiencing the greatest temperature increase in the continental United States (Karl 2009, p. 129). Annual mean precipitation levels are expected to decrease in western North America and especially the southwestern States by mid-century (IPCC 2007, p. 8; Seager *et al.* 2007 p. 1,181), with a predicted 10- to 30-percent decrease in precipitation in mid-latitude western North America by the year 2050 (Milly *et al.* 2005, p. 1). These changes are likely to increase drought in the areas where Graham's and White River beardtongues grow.

We do not have a clear understanding of how Graham's and White River beardtongues respond to precipitation changes, although generally plant numbers decrease during drought years and recover in subsequent seasons that are less dry. Graham's beardtongue may not respond as quickly as White River beardtongue to increased winter and spring moisture immediately preceding the growing season (Lewinsohn and Tepedino 2007, pp. 12–13). In addition, Graham's beardtongue

flowering is sporadic and may be responding to environmental factors that we have not been able to measure in the field, such as precipitation. Graham's beardtongue may need more than one year of normal precipitation to recover from prolonged drought (Lewinsohn 2005, p. 13), although this hypothesis has not been tested. Conversely, current analyses indicate that there is no association between regional precipitation patterns and population demographics (McCaffrey 2013a p. 16), although regional weather stations used in the analyses are not likely to pick up the site-specific precipitation that is more likely to influence these species' vital rates.

That these beardtongues are adapted to living on such hot and dry patches of soils (even more so than other native species in the same area) may mean they are better adapted to withstand stochastic events such as drought. However, increased intensity and frequency of droughts may offer Graham's and White River beardtongues populations fewer chances to recover and may lead to a decline in both species. Some estimate that approximately 20 to 30 percent of plant and animal species are at increased risk of extinction if increases in global average temperature exceed 2.7 to 4.5 °F (1.5 to 2.5 °C) (IPCC 2007, p. 48). By the end of this century, temperatures are expected to exceed this range by warming a total of 4 to 10 °F (2 to 5 °C) in the Southwest (Karl 2009, p. 129).

Accelerating rates of climate change of the past two or three decades indicate that the extension of species' geographic range boundaries toward the poles or to higher elevations by progressive establishment of new local populations will become increasingly apparent in the relatively short term (Hughes 2005, p. 60). The limited

range of oil shale substrate that Graham's and White River beardtongues inhabit could limit the ability of these species to adapt to changes in climactic conditions by progressive establishment of new populations. However, some experts believe that it may be possible for these species to move to other aspects within their habitat in order to adapt to a changing climate (Service 2012c, entire). For example, Graham's beardtongue is typically observed on west- or southwest-facing slopes (see *Species Information*, "Habitat" for Graham's beardtongue, above). White River beardtongue exhibits a similar characteristic, although this species is more evenly distributed on different slope aspects (see *Species Information*, "Habitat" for White River beardtongue, above). It may be possible for these species to gradually move to cooler and wetter slope aspects (for example, north-facing hillsides) within oil shale soils in response to a hotter drier climate (Service 2012c, entire), but only if these types of habitat are within reasonable seed-dispersal distances and only if these habitats remain intact with increasing oil and gas development.

In summary, climate change is affecting and will affect temperature and precipitation events in the future. We expect that Graham's and White River beardtongues, like other narrow endemics, may be negatively affected by climate change-related drought. However, the scope of any negative effects (i.e., whether they would rise to a level that threatens the species) is unknown and mostly speculative at this time. Current data are not reliable enough at the local level for us to draw conclusions regarding the impacts of climate change as a threat to Graham's and White River beardtongues. However, we further evaluate the potential cumulative effects associated

with energy development, invasive species, and small population size (see Cumulative Effects from All Factors, below).

2014 CA protections—Since we do not fully understand either Graham’s or White River beardtongues’ responses to climate change, the conservation team, depending on funding, will install weather monitoring equipment adjacent to long-term monitoring sites to collect much needed climate data. The data collected from weather monitoring will be correlated with demography data to determine basic species responses to climate patterns. This information will help the conservation team understand how to better craft conservation measures to address impacts from climate change. In the interim, designated conservation areas provide 21,106 ha (44,373 ac) of protected habitats for Graham’s and White River beardtongues (see Ongoing and Future Conservation Efforts).

Inadequacy of Existing Regulatory Mechanisms

In our 2013 proposed rule, we found existing regulatory mechanisms to be inadequate to protect Graham’s and White River beardtongues from the threats we had identified.

Federal

Within Colorado, the Raven Ridge Area of Critical Environmental Concern (ACEC) was established in 1997, in part, to protect candidate and BLM sensitive plant species, including Graham's and White River beardtongues (BLM 1985, p. 2, BLM 1997, p. 2-17). The Federal Land Policy and Management Act (FLPMA) (43 U.S.C. 1701 *et seq.*) defines ACECs as "areas within the public lands where special management attention is required ... to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards" (Sec. 103(a)). Designation as an ACEC recognizes an area as possessing relevant and important values that would be at risk without special management attention (BLM 2008b, p. 4-426). To protect listed and candidate species including the beardtongues, the Raven Ridge ACEC restricts motorized travel to existing roads and trails and includes a no surface occupancy (NSO) stipulation for new oil and gas leases within the ACEC (BLM 1997, pp. 2-19, 2-44). The NSO designation prohibits long-term use or occupancy of the land surface for fluid mineral exploration or development to protect special resource values (BLM 2008c, p. 38). However, NSO stipulations do not apply to valid existing rights (BLM 1997, p. 2-31), which account for 14 and 11 percent of the total known populations for Graham's and White River beardtongues, respectively.

Not quite half of all known Graham's beardtongue plants in Colorado occur within the Raven Ridge ACEC (37 of 81 or 46 percent). About 28 percent (439 of 1,579) of the known White River beardtongue plants in Colorado also occur within the Raven Ridge ACEC. We expect the NSO stipulation will continue to provide

sufficient protection to the plants in the ACEC. Twenty-one percent of the Raven Ridge ACEC is currently leased, and the NSO stipulations for future leasing are in effect for this entire area; however, conditions of approval such as avoidance of plants by 300 ft can be identified and incorporated through the NEPA process. An additional 30 percent of the Raven Ridge ACEC was proposed for leasing in 2013, but the lease sale is now deferred for further analysis (BLM 2013b, entire). To date, no wells have been drilled or approved within the Raven Ridge ACEC (Service 2013, p. 12). There are no ACECs established for either Graham's beardtongue or White River beardtongue in Utah.

Both species are listed as BLM sensitive plants in Colorado and Utah, which affords them limited policy-level protection through the Special Status Species Management Policy Manual #6840, which forms the basis for special status species management on BLM lands (BLM 2008a, entire). Because both beardtongue species are considered BLM sensitive and candidate species under the Act, the BLM currently protects them as they would listed species. In addition, conservation measures for Graham's beardtongue from the 2007 CA incorporated by the Vernal Field Office include a 91-m (300-ft) setback from surface-disturbing activities (BLM 2008c, p. L-16).

As previously described (see Ongoing and Future Conservation Efforts), in 2007, a voluntary 5-year conservation agreement for Graham's beardtongue was signed by the Service, the BLM, and the Utah DNR. The agreement intended to create a program of

conservation measures to address potential threats to Graham's beardtongue at the Federal, State, and local levels. Since the conservation agreement was signed, the BLM has funded surveys for both species, adding 4,000 new Graham's beardtongue points and 400 new White River beardtongue points to our files. In addition, a long-term monitoring program on both species has been ongoing since 2004. However, BLM will not be able to retain Federal ownership of all occupied habitat, as recommended in the 2007 CA. The Utah Recreational Land Exchange Act of 2009 (Public Law 111-53, signed August 19, 2009) directed the exchange of lands within Grand, San Juan, and Uintah Counties, Utah, between the BLM and SITLA. Several of the parcels that were transferred to SITLA include 883 (2 percent) known individual Graham's beardtongue plants within populations 13 and 16, and the lands occur in areas of high potential energy development (see Energy Exploration and Development, above). The land exchange was finalized on May 8, 2014 (SITLA 2014).

The FLPMA requires the BLM to develop and revise land-use plans when appropriate (43 U.S.C. 1712(a)). The BLM developed a new resource management plan (RMP) for the Vernal Field Office in 2008 to consolidate existing land-use plans and balance use and protection of resources (BLM 2008c, pp. 1-2). Through the Vernal Field Office RMP, the BLM commits to conserve and recover all special status species, including candidate species (BLM 2008c, p. 129). However, the RMP special status species goals and objectives as previously drafted were not adequate to ensure that all Federal actions avoid impacts to Graham's beardtongue or White River beardtongue. Conservation measures previously implemented by the BLM have not

fully prevented impacts (for example, well pad development or road maintenance and construction in occupied habitat as discussed previously in Energy Exploration and Development, and Road Maintenance and Construction) to Graham's beardtongue or White River beardtongue.

2014 CA protections—The 2014 CA provides for additional protection of the species because BLM will establish conservation areas where new surface-disturbing activities will be limited to 5 percent for Graham's beardtongue and 2.5 percent for White River beardtongue; avoid Graham's and White River beardtongues from surface-disturbing activities by 91.4 m (300 ft); and mitigate impacts when plants cannot be avoided by 91.4 m (300 ft). The BLM will implement the measures of the 2014 CA through incorporation of the conservation measures in permitting processes and policy. BLM will incorporate the conservation measures during its next RMP planning process.

During oil and gas development activities that have occurred to date, the BLM minimized some impacts to Graham's beardtongue and its habitat through incorporation of conservation measures from the 2007 Conservation Agreement. Conservation measures include moving well pad and pipeline locations to avoid direct impacts to the species. These measures minimize direct impacts to the species, particularly at the current low rates of development that have occurred in the habitat.

We conclude that existing and future conservation measures achieved through the 2014 CA, including the creation of conservation areas, limiting new surface disturbances, and applying a 91-m (300-ft) avoidance measure, are sufficient to protect these species.

State

No State laws or regulations specifically protect rare plant species in Utah or Colorado. Utah law prevents only the harvest or transport of native vegetation without proof of ownership or written permission of the landowner or managing State or Federal agency (Utah Code 78B chapter 8 Section 602). Approximately 27 and 10 percent of all known plants of Graham's and White River beardtongues, respectively, occur on State land. After the land exchange as described above, about 29 percent of all known Graham's beardtongue plants will be located on State lands. We do not know of any White River beardtongues occurring on lands identified for exchange.

2014 CA protections—As a signatory to the 2014 CA, SITLA, and UDWR are establishing 794 ha (1,961 ac) of State lands as conservation areas for Graham's and White River beardtongues. These conservation areas contain 4.4 percent of the total population of Graham's beardtongue and 1.4 percent of the total population of White River beardtongue. As previously described, within these conservation areas additional surface disturbance will be limited to 5 percent for conservation areas designated for Graham's beardtongue and 2.5 percent for conservation areas for White River

beardtongue, and surface disturbance will avoid plants by 91.4 m (300 ft) or mitigate unavoidable impacts. The SITLA will establish these conservation areas with associated conservation measures through a regulation, director's order, or joint lease stipulation. With these regulatory mechanisms in place both beardtongues species are afforded some additional protection on State lands.

Local

As stated above, approximately 21 and 28 percent of all known plants of Graham's and White River beardtongues, respectively, occur on private lands, and the majority of these are in Uintah County, Utah.

2014 CA protections— Through the 2014 CA, Uintah County, Utah, will enact a zoning ordinance that would designate 2,787 acres of conservation areas that protect 12 percent (4,764 plants) of Graham's beardtongue and 13 percent (1,574) of White River beardtongue on private lands. The ordinance would establish conservation areas and would adopt the surface-disturbance limits and buffers on private lands as described in Table 4. The enactment of a zoning ordinance by Uintah County provides additional regulatory protections to a significant portion of both beardtongue populations on private lands.

Summary of Inadequacy of Existing Regulatory Mechanisms

In summary, we find that both species will be afforded protection through the implementation of the 2014 CA and its establishment and management of conservation areas that protect 64 percent of the population of Graham's and 76 percent of the population of White River beardtongues. The BLM will apply necessary regulatory provisions through permitting and conditions of approval. Uintah County and SITLA will utilize zoning ordinances and regulations, respectively, to implement the conservation commitments of the 2014 CA. Because of these additional conservation measures and implementing regulations associated with the 2014 CA, we conclude that existing regulatory mechanisms are adequate to protect both species.

Cumulative Effects from All Factors

In our 2013 proposed rule, we concluded that the cumulative effects of increased energy development, livestock grazing, invasive weeds, small population sizes, and climate change were a threat to the two beardtongue species. The combination of these factors could increase the vulnerability of these species. Smaller populations, as discussed above (see Small Population Size), are more prone to extinction, and these smaller populations could experience more severe effects of other factors. For example, incremental increases in habitat alteration and fragmentation from increased energy development (including oil shale, tar sands, and traditional oil and gas) could increase weed invasion and fugitive dust, as well as increase the severity of impacts from other factors such as grazing, as grazers become more concentrated into undisturbed areas, and road maintenance, as more roads are constructed.

Climate change is likely to augment the ability of invasive, nonnative species to outcompete native plant species and also reduce the ability of native plant species to recover in response to perturbations. Climate change may also change the effects of grazing events from native grazers to the extent that reproduction of either beardtongue species is hindered so that populations are no longer resilient. This scenario underscores the need to protect not only the associated plant communities within Graham's and White River beardtongue habitat, but those immediately adjacent to beardtongue habitat (Service 2012c, entire). Measures such as implementing a 300-ft buffer from disturbance, connecting populations by protecting areas between occurrences, and ensuring protection measures are spread across the range of the species will help to ensure resiliency of both species.

2014 CA protections—The 2014 CA addresses the threat from energy development, as well as each of the individual factors that contribute to the cumulative threats to the species from energy development (see Energy Exploration and Development), livestock grazing (see Grazing and Trampling), invasive weeds (see Invasive Weeds), small population size (see Small Population Size), and climate change (Climate Change). The 2014 CA provides protection to Graham's and White River beardtongues and their associated plant and pollinator communities at a landscape level through the establishment and management of the conservation areas that protect both occupied and suitable habitat. The conservation area boundaries were drawn to connect populations and include adjacent natural communities. The 300-ft buffer from

disturbance and limited surface disturbance helps to ensure that the disturbance within conservation areas is low enough to maintain the integrity of the natural community. In addition, both species are represented within conservation areas across their ranges as shown by units in Figure 3. Thus the conservation areas protect natural areas immediately adjacent to beardtongue habitat. The implementation, most notably of surface-disturbance caps and avoidance buffers, ensures the protection of individual plants, populations, and population connectivity. In addition, the 2014 CA provides for monitoring and adaptive management associated with livestock grazing, invasive weeds, and climate change. These combined conservation approaches address the threats identified in the proposed rule independently and thus will prevent these threats from acting cumulatively.

Determination

As required by the Act, we considered the five factors in assessing whether the Graham's or White River beardtongue meets the definition of a threatened or endangered species. We examined the best scientific and commercial information available regarding present and future threats to the species. Based on our review of the best available scientific and commercial information, we find that the current and future threats are not of sufficient imminence, intensity, or magnitude to indicate that either the Graham's or White River beardtongue is in danger of extinction (endangered), or likely to become endangered within the foreseeable future (threatened), throughout all or a significant portion of its range. Therefore, Graham's and White River beardtongues do not meet the

definition of a threatened or endangered species, and we are withdrawing the proposed rules to list Graham's and White River beardtongues as threatened species and designate critical habitat for these species. Our rationale for this finding is outlined below.

Graham's and White River beardtongues have restricted ranges limited to a specific soil type, but where monitored their populations are stable. The existing numbers of individuals and populations are sufficient for these species to remain viable into the future. Further, the distribution of Graham's and White River beardtongues encompasses and is representative of the known genetic diversity of both beardtongue species, helping to support the species' resiliency to stochastic events.

In our proposed rule, we identified several threats that we expected to significantly impact the status of these species into the foreseeable future, which was based on the best available scientific and commercial information at that time. One of the threats to both beardtongue species identified in the 2013 proposed rule was from energy development. We concluded that population stability of both species was likely to deteriorate as habitat loss and fragmentation from energy development, particularly oil shale and tar sands, was likely to be a threat to Graham's and White River beardtongues in the foreseeable future. Our conclusion was based on the extent and magnitude of energy development that is likely to happen in the foreseeable future and the lack of adequate measures to protect and conserve these species. Oil shale and tar sands overlap most of the known habitat of these species. Up to 79 and 90 percent of the total known populations of Graham's and White River beardtongues could potentially be impacted

with this type of development within the next few years, as Redleaf has secured all permits to begin work in 2014 (Redleaf 2014), and project construction for the Enefit project is planned to start in 2017 (BLM 2013e).

However, since that time, significant ongoing and new conservation efforts through the 2014 CA have reduced the magnitude of potential impacts in the future such that these species no longer meet the definition of a threatened or endangered species. The 2014 CA establishes conservation areas for both species on Federal, State, and private lands where surface disturbance will be limited to an additional 5 percent from the current baseline for Graham's beardtongue and an additional 2.5 percent from the current baseline for White River beardtongue and an avoidance buffer of 91.4 m (300 ft) from plants will be maintained, which is expected to protect the habitat of the species and their pollinators. On BLM lands, any surface disturbance occurring inside or outside of conservation areas will avoid Graham's beardtongue or White River beardtongue by 91.4 m (300 ft).

The conservation measures in the 2014 CA will protect 64 percent of the population of Graham's beardtongue and 76 percent of the population of White River beardtongue in conservation areas, maintaining the resiliency of both species so that they can better withstand cumulative impacts from invasive weeds, climate change, and small population size. Another 4 percent of the Graham's beardtongue population will be protected outside of conservation areas on BLM lands by spatial buffers that will protect plants from surface-disturbing activities by 300 ft. This conservation measure is

consistent with BLM protections for the species since 2007. In addition, threats from livestock grazing are addressed in the 2014 CA by monitoring livestock grazing to better understand and detect impacts to the species. Where impacts are detected, BLM will change the grazing regime or take other actions as necessary to reduce these impacts. This measure provides protection for both beardtongue species from livestock grazing. Additional measures include developing and implementing a weed management plan to prevent and control weed invasions and continued population monitoring. The conservation team will periodically review the status of Graham's and White River beardtongue and make adjustments to conservation areas or conservation measures as appropriate to benefit and conserve the species. These measures will significantly reduce the threats to the species from energy development and the cumulative effects from energy development, livestock grazing, invasive weeds, climate change and small population size.

Certain conservation measures that are identified in the 2014 CA will be implemented via regulations, ordinance, and permitting. The signatory agencies that have implementation authority will put the regulatory controls in place to assure that these measures will be adequately implemented, e.g., BLM conditions of approval, County ordinances, SITLA regulations. In addition, the 2014 CA independently addresses and reduces the magnitude of each of the threats identified in the 2013 proposed rule. Addressing and reducing impacts from each threat individually will prevent them from acting cumulatively.

As summarized in the **Ongoing and Future Conservation Efforts** and **PECE Analysis** sections above, we have a high degree of certainty that the 2014 CA will be implemented (see Table 3) and effective. We have determined that the measures will be effective at eliminating or reducing threats to the species because they protect occupied and suitable habitat, provide habitat and additional management information to address the effects of energy development, livestock grazing, invasive weeds, climate change, small population size, and the inadequacy of regulatory mechanisms, and institute on-the-ground protections that better manage and protect habitat and address threats.

We have a high degree of certainty that the measures will be implemented because several of the conservation team partners have a track record of implementing conservation measures for the Graham's beardtongue since 2007. Over approximately the past 6 years of implementation, BLM, Utah DNR, the Service, and Uintah County have implemented many of the conservation measures from the 2007 CA for Graham's beardtongue, including species surveys, habitat modeling, avoidance of plants by surface-disturbing activities, incorporating the conservation measures from the conservation agreement into the BLM Vernal Field Office RMP, examining the reproductive biology of the species, and conducting a demography study of the species. The 2014 CA has sufficient annual monitoring and reporting requirements to ensure that all of the conservation measures are implemented as planned, and are effective at removing threats to a substantial amount of Graham's and Whiter River beardtongues and their habitat. The collaboration between the Service, Uintah County, Utah DWR, SITLA, PLPCO and BLM requires regular conservation team meetings and involvement of all parties in order

to fully implement the 2014 CA, and a process has been agreed to among these entities to achieve this conservation objective. Based on the implementation of previous actions from several members of the conservation team, we have a high level of certainty that the conservation measures in the 2014 CA (for those measures not already begun), will be implemented and that they will be sufficiently effective.

In summary, we conclude that the conservation efforts in the 2014 CA have sufficient certainty of implementation and effectiveness that they can be relied upon in this final listing determination. Further, we conclude that conservation efforts have reduced or eliminated current and future threats to Graham's and White River beardtongues to the point that the species are no longer in danger of extinction now or in the foreseeable future.

The threat from energy development and especially oil shale development has been reduced by the conservation measures in the 2014 CA for the foreseeable future as oil shale development is expected to proceed slowly and avoid plants within established conservation areas over the next 15 years. Development of oil shale resources over the next 10–15 years will determine the intensity, magnitude, and long-term viability of this threat. Continued expansion of oil shale resources will depend on the industry's success over the next 10–15 years. Since we cannot predict the demand for energy and the viability of oil shale development beyond 15 years, the foreseeable future from the threat of energy development to Graham's and White River beardtongue from oil shale development is 10–15 years. The threat to the species from the cumulative impacts of

energy development, grazing, invasive weeds, small population sizes, and climate change is also the same 10–15-year time period because energy development would be the leading threat to causing widespread landscape-scale disturbance. Without the threat of energy development, the other threats do not rise to a level where they would act cumulatively, and thus these other impacts will not threaten Graham’s and White River beardtongue in the foreseeable future. In addition, the 2014 CA addresses these threats over the foreseeable future and may be renewed after 15 years if successful at conserving the species.

Overall, since we expect the species to persist in their current distribution and to be protected from threats within 2014 CA designated conservation areas and on BLM lands, we conclude that they will have sufficient resiliency, redundancy, and representation to persist now and in the foreseeable future. Therefore, we are withdrawing our proposed rule to list Graham’s and White River beardtongues as threatened species. Since these two species will not be listed under the Act, we are also withdrawing our proposed critical habitat rule as it is no longer applicable.

We will continue to monitor the status of both species through monitoring requirements in the 2014 CA, and to evaluate any additional information we receive. These monitoring requirements will not only inform us of the amount of disturbance from energy development, impacts to the species from livestock grazing, and amount of habitat occupied by invasive weeds within Graham’s and White River beardtongues designated conservation areas, but will also help inform us of the status of Graham’s and White

River beardtongues population and stability. Additional information will continue to be accepted on all aspects of the species. We encourage interested parties, outside of those parties already signatories to the 2014 CA, to become involved in the conservation of the Graham's and White River beardtongues.

If at any time data indicate that protections under the Act may be warranted, for example, should we become aware of declining implementation of or participation in the 2014 CA, or noncompliance with the conservation measures, or if there are new threats or increasing stressors that rise to the level of a threat to either species, we will initiate listing procedures, including, if appropriate, emergency listing pursuant to section 4(b)(7) of the Act.

Significant Portion of the Range

Under the Act and our implementing regulations, a species may warrant listing if it is an endangered or a threatened species throughout all or a significant portion of its range. The Act defines “endangered species” as any species which is “in danger of extinction throughout all or a significant portion of its range,” and “threatened species” as any species which is “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” The term “species” includes “any subspecies of fish or wildlife or plants, and any distinct population segment [DPS] of any species of vertebrate fish or wildlife which interbreeds when mature.” We published a final policy interpreting the phrase “Significant Portion of its Range” (SPR)

(79 FR 37578). The final policy states that (1) if a species is found to be an endangered or a threatened species throughout a significant portion of its range, the entire species is listed as an endangered or a threatened species, respectively, and the Act's protections apply to all individuals of the species wherever found; (2) a portion of the range of a species is "significant" if the species is not currently an endangered or a threatened species throughout all of its range, but the portion's contribution to the viability of the species is so important that, without the members in that portion, the species would be in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range; (3) the range of a species is considered to be the general geographical area within which that species can be found at the time FWS or NMFS makes any particular status determination; and (4) if a vertebrate species is an endangered or a threatened species throughout an SPR, and the population in that significant portion is a valid DPS, we will list the DPS rather than the entire taxonomic species or subspecies.

The SPR policy is applied to all status determinations, including analyses for the purposes of making listing, delisting, and reclassification determinations. The procedure for analyzing whether any portion is an SPR is similar, regardless of the type of status determination we are making. The first step in our analysis of the status of a species is to determine its status throughout all of its range. If we determine that the species is in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range, we list the species as an endangered (or threatened) species and no SPR analysis will be required. If the species is neither an endangered nor a threatened species throughout all of its range, we determine whether the species is an endangered or a

threatened species throughout a significant portion of its range. If it is, we list the species as an endangered or a threatened species, respectively; if it is not, we conclude that listing the species is not warranted.

When we conduct an SPR analysis, we first identify any portions of the species' range that warrant further consideration. The range of a species can theoretically be divided into portions in an infinite number of ways. However, there is no purpose to analyzing portions of the range that are not reasonably likely to be significant and either an endangered or a threatened species. To identify only those portions that warrant further consideration, we determine whether there is substantial information indicating that (1) the portions may be significant and (2) the species may be in danger of extinction in those portions or likely to become so within the foreseeable future. We emphasize that answering these questions in the affirmative is not a determination that the species is an endangered or a threatened species throughout a significant portion of its range—rather, it is a step in determining whether a more detailed analysis of the issue is required. In practice, a key part of this analysis is whether the threats are geographically concentrated in some way. If the threats to the species are affecting it uniformly throughout its range, no portion is likely to warrant further consideration. Moreover, if any concentration of threats apply only to portions of the range that clearly do not meet the biologically based definition of “significant” (i.e., the loss of that portion clearly would not be expected to increase the vulnerability to extinction of the entire species), those portions will not warrant further consideration.

If we identify any portions that may be both (1) significant and (2) endangered or threatened, we engage in a more detailed analysis to determine whether these standards are indeed met. The identification of an SPR does not create a presumption, prejudgment, or other determination as to whether the species in that identified SPR is an endangered or a threatened species. We must go through a separate analysis to determine whether the species is an endangered or a threatened species in the SPR. To determine whether a species is an endangered or a threatened species throughout an SPR, we will use the same standards and methodology that we use to determine if a species is an endangered or a threatened species throughout its range.

Depending on the biology of the species, its range, and the threats it faces, it may be more efficient to address the “significant” question first, or the status question first. Thus, if we determine that a portion of the range is not “significant,” we do not need to determine whether the species is an endangered or a threatened species there; if we determine that the species is not an endangered or a threatened species in a portion of its range, we do not need to determine if that portion is “significant.”

Our review determined that there are no concentrations of threats in any part of the ranges occupied by Graham’s or White River beardtongues. In our 2013 proposed rule, we identified populations 19 and 20 of Graham’s beardtongue (Figure 1) and the heart of White River beardtongue range (Population 3; Figure 2) as vulnerable due to ex-situ oil shale development. The majority of these populations occurs on private lands, and provides an important connectivity link between populations in Utah and Colorado.

The 2014 CA addressed these concerns by providing protections for both species across their ranges, including protections on private lands within populations 19 and 20 for Graham's beardtongue and population 3 for White River beardtongue. Protections include the establishment of conservation areas that encompass 17,957 ha (44,373 ac) of occupied and suitable habitat, surface disturbance limits, detection surveys prior to project initiation, and avoidance of plants by 300 ft from surface-disturbing activities within conservation areas. Conservation areas will protect 64 percent of the known population of Graham's beardtongue across its range and 76 percent of the population of White River beardtongue across its range. In addition, on BLM lands Graham's and White River beardtongues will be avoided by 300 ft from surface-disturbing activities. These protections reduce the threats to the species that otherwise may have been considered geographically concentrated. With the development and implementation of the 2014 CA, we find no portions of these species' ranges where potential threats are significantly concentrated or are substantially greater than in other portions of their ranges. Therefore, we find that factors affecting each species are essentially uniform throughout their ranges, indicating no portion of the range of the two species warrants further consideration of possible endangered or threatened status under the Act.

Conclusion

Our review of the best available scientific and commercial information indicates that with the development and implementation of the 2014 CA, neither Graham's beardtongue nor White River beardtongue is in danger of extinction (an endangered

species), or likely to become endangered within the foreseeable future (a threatened species), throughout all or a significant portion of their ranges. Therefore, we find that listing Graham's beardtongue or White River beardtongue as endangered or threatened species under the Act is not warranted at this time.

We request that you submit any new information concerning the status of, or threats to, Graham's and White River beardtongues to our Utah Field Office (see **ADDRESSES** section) whenever it becomes available. New information will help us monitor these two plant species and encourage their conservation. If an emergency situation develops for either of these species, we will act to provide immediate protection.

References Cited

A complete list of all references cited in this document is available on the Internet at <http://www.regulations.gov> at Docket No. FWS-R6-ES-2013-0081 and Docket No. FWS-R6-ES-2013-0082, or upon request from the Field Supervisor, Utah Ecological Services Field Office (see **ADDRESSES** section).

Authors

The primary authors of this document are the staff members of the Utah Ecological Services Field Office (see **ADDRESSES**).

Authority

The authority for this action is the Endangered Species Act of 1979, as amended (16 U.S.C. 1531 *et seq.*).

Dated: July 22, 2014.

Stephen Guertin,

Acting Director, U.S. Fish and Wildlife Service.

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